

Revised Willamette Mercury TMDL and Water Quality Management Plan

Public Comments



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DEQ is a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.



State of Oregon
Department of
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DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.state.or.us.

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Introduction

This document contains the text or links to the text of all comments received during the public comment period July 3, 2019 to September 6, 2019 for the Revised Willamette Mercury TMDL and WQMP. For DEQ's response to these comments, please see the "Response to Comment" document available on [DEQ's Willamette Mercury TMDL page](#).

Comments

#	Name, Org, State	Comment Text
1.	Steven Wright, Texas	<p>From: S Wright Subject: 700PM</p> <p>Heavy Metals Concerns</p> <p>DEQ has a fact sheet that informs miners about the recovery of mercury and DEQ has worked with miners to collect mercury for disposal. DEQ noted that recreational mining can actually produce a benefit to water quality when miners remove mercury from rivers left behind by old commercial mining operations. (INR Policy Paper 2003-01, prepared by Oregon State University). This paper also mentions the removal of all the litter in the form of lead fishing weights, nails and trash from the streams. There is no scientific data that shows a rise in mercury in fish after dredging has occurred.</p> <p>Proposal: Maintain the current rules Steven Wright</p>
2.	Craig & Linda Olson, Oregon	<p>From: Craig And Linda Subject: Willamette Basin Mercury TMDL</p> <p>Andrea Matzke, Basin Coordinator,</p> <p>I am an Oregon placer miner, property owner and tax payer in the state of Oregon disputing the Department of Environmental Quality's (DEQ) recommendation to shut down suction dredging and motorized mining operation as the best management practices solution for reducing mercury TMDLs within the Willamette basin.</p> <p>While the Department of Environmental Quality (DEQ) recommends leaving the elemental mercury undisturbed in the soil and waterways, this is not realistic. If not removed, such naturally occurring mercury will slowly but eventually migrate downstream (whether we dredge or not dredge) due to seasonal storms and natural winter water flow. Previously used efforts of removal by 'public agencies' and 'at the public's expense' (when such activity became a budget priority) is not a realistic or cost effective (fiscally sound) approach, and the DEQ has offered no better method of removing the mercury than what suction dredging and motorized mining has already been proven to provide, time and time again.</p> <p>I don't understand how DEQ expects to reach the 0.04 ppm rating by shutting</p>

#	Name, Org, State	Comment Text
		<p>down motorized mining because the winter storms move much more sediment thru the watershed than the few miners actually dredge in any season. The holes that are dredged are filled in with the suspended solids from the stream and small cobble so it actually traps any moving mercury (if DEQ can prove there is measurable mercury at all).</p> <p>In a 1997 study of impact of gold dredging on downstream water clarity and sediments showed that water chemistry downstream from dredging operations returned to upstream levels within 80-160m downstream from the dredge. Note: Although mercury was not measured in the plumes, the heavier density of mercury being 13.534 g/cm³ compared to the density of copper and zinc at 8.94 and 7.14 g/cm³ respectively would have resulted in mercury falling out of suspension much sooner than the copper or zinc.</p> <p>A U.S. National Academy of Sciences report in 2000 examined the dangers of mercury and concluded that the risk of harm from the intake of mercury from eating fish for the majority of people was low. It is unlikely that mercury is a threat to a healthy adult who eats a normal and varied diet. All living organisms that evolved with the planet Earth contain trace quantities of mercury. Elemental mercury is washed into streams and the sea, where bacteria converts it into organic methylmercury, which could enter the food web. At the same time, plants and other organisms are busy converting methylmercury back to inorganic compounds. This constant cycling of mercury from elemental to organic and back again has occurred for eons. Only recently, through x-ray spectroscopy, has the type of mercury found in seafood (methylmercury cysteine) been identified.</p> <p>Studies have also determined that the mercury found in seafood may be less toxic than the form of mercury on which fish consumption advisories have been based. In addition, a number of studies have found that the essential element selenium, high amounts of which are found in ocean fish, sequesters mercury, thus neutralizing its toxic effects. This may be the reason why studies have never shown an epidemic of child developmental problems in coastal populations whose diets have been comprised in large part of seafood.</p> <p>In fact, the evidence shows that virtually all seafood delivers big health rewards at every age... and poses virtually no risks at any age (see the joint EPA-FDA guidance for the few exceptions).</p> <p>There is overwhelming evidence that most ocean fish do much more good than harm (if any) to children, and also on the generally unrecognized, overlooked role that fish-borne selenium plays in neutralizing fish-borne mercury (See “Mercury-Fighting Mineral in Fish Overlooked in Heated Debate” and “FDA Analysis Supports More Fish for Moms and Kids”).</p> <p>The United States Environmental Protection Agency recognizes that there are environmental benefits to motorized dredge mining activities, as mining efforts effectively remove mercury from creeks, streams and rivers, extracting up to 98% of the mercury that mining equipment picks up (Agency 2002).</p>

#	Name, Org, State	Comment Text
		<p>Modern day small-scale gold suction dredgers do not use mercury to recover gold during the operation of a gold suction dredge. While we occasionally find very small quantities of mercury, what mercury is found is usually bound to (amalgamated with) the gold. As miners dredge through sediments, sands and gravel from streams and former mine sites to separate out the gold, in addition to removing elemental mercury, they also remove lead and trash found in the waterways.</p> <p>A 2005 staff report published by the State Water Resources Control Board, Division of Water Quality concluded that a 4" gold suction dredge captures 98% of the mercury that it sucks from the environment. It also noted that portions of the remaining 2% that escaped from the suction dredge was floured (i.e., in small particles) and that such mercury may travel much further downstream where it may become available for biological action by bacteria where it may be converted to methylmercury. Note: The author noted that parent material collected for the study already contained "floured" mercury along with the accumulated or puddled mercury and was not typical of areas in which gold dredges operate.</p> <p>A 2007 news release by Washington State Department of Ecology, Brian Dick, manager with Ecology's hazardous waste and toxics reduction program supported suction gold dredging and their program results further supported the results of the 2000 EPA and California's Division of Toxic Substance Control program, in providing an effective method of removal of the majority of elemental mercury before it could be converted to methylmercury (by bacteria)."</p> <p>The Mining Act of 1872 H.R. 36 passed by Congress and signed by President Ulysses S. Grant, Congress extended an offer that grants all U.S. citizens a statutory right to enter upon federal lands to explore and develop valuable mineral deposits. On August 9, 2019 a Miner's Petition was submitted to Stop State-Law-Based Prohibition of Mining on Federal Lands to the Secretary of the Interior by the County of Siskiyou, California's Board of Supervisors stating that Federal law preempts the extension of any state land use planning regulation or ordinance on federal lands.</p> <p>Per 36 C.F.R. 228.8(h) Certification or other approval issued by State agencies or other Federal agencies of compliance with the foregoing categories of laws and regulations related to mining operations will be accepted as compliance with similar or parallel requirements of these regulations. Operators are not required to comply with any state statutes or regulations purporting to control the use of Forest Service land where such regulation would materially and unreasonably interfere with prospecting, mining or processing operations, because state action of this nature interferes with the Congressional objectives confided to Forest Service administration under federal law and are therefore preempted.</p> <p>The courts have ruled that the owner of an unpatented claim has 'real property' in the minerals and the right to remove them. The land itself belongs to the United States who is holding the title 'in trust for' the claim owner against the</p>

#	Name, Org, State	Comment Text
		<p>day that it is patented. ‘In trust for’ makes this a fiduciary trust where the Grantor (United States) is holding title for the benefit of the Grantee (claim owner), and is charged to protect the Grantee’s rights. Our mining claim grants the holder (us) with the preferential right to extract the valuable minerals within the claim, and for uses incident to that.</p> <p>Historically, mining was one of the major economic forces within the Bohemia Mining District and throughout the state, utilized largely by local miners and on a small scale, individual basis. Motorized dredging has been banned in much of the state of Oregon based upon theoretic negative impacts to the fish and fish bearing streams, with little to no evidence showing that it is detrimental to their environment. In fact, activities very similar to dredging have been used to stir up compacted river beds to address fish disease concerns and provide better spawning grounds for fish species (Fish and Game 2016).</p> <p>In closing, before the problem becomes even more life threatening, and as essential to protecting our environment, wildlife and human health protection, I recommend that this state commission, promote, contract and pay small-miner suction dredge operators to remove any and all mercury found in our waterways by suction dredging our streams and waterways, before the mercury can be moved further into the Willamette Basin and converted to methylmercury (by bacteria).</p> <p>I also recommend that the requirement for 700-PM permits be eliminated altogether, as non-industry related, which would increase the number of dredgers in the waterways each year working to recover and reduce any elemental mercury found to be accumulating and/or pooling in our waterways.</p> <p>Literature Reviewed and or Cited: Ashley, R.P., J.J. Rytuba, R. Rogers, B.B. Kotlyar and D. Lawler, 2002, Preliminary Report on Mercury Geochemistry of Placer Gold Dredge Tailings, Sediments, Bedrock, and Waters in the Clear Creek Restoration Area, Shasta County, California, U.S. Department of the Interior, U.S. Geological Survey, Menlo Park, CA. Open-File Report 02-401 Humphreys, R., 2005, Losses and Recovery During a Suction Dredge Test in the South Fork of the American River. Staff Report, State Water Resources Control Board, Division of Water Quality. Prussian, A.M., T.V. Royer, and G.W. Minshall. 1999. Impact of Suction Dredging on Water Quality, Benthic Habitat, and Biota in the Fortymile River, Resurrection Creek, and Chatanika River, Alaska. U.S. EPA Report, Region 10, Seattle, WA. Rytuba, J., C. Janik, and F. Goff. 1996. Transport of Mercury in Sulphur Creek, CA. U.S. Geological Survey, Presentation given at the USGS Workshop on Mercury Cycling in the Environment. http://toxics.usgs.gov/pubs/hg/abstracts.html . US EPA, 2001. Mercury Recovery from Recreational Gold Miners. http://www.epa.gov/region09/cross_pr/innovations/merrec.html WA DOE, 2007, Miners Remove Gold Rush Mercury from Washington Streams. Washington State Department of Ecology, Hazardous Waste and</p>

#	Name, Org, State	Comment Text
		<p>Toxics Reduction Program, Yakima, Washington http://www.ens-newswire.com/ens/sep2007/2007-09-18-096.asp https://www.montereyfish.com/mercury-and-selenium?f https://www.vitalchoice.com/article/most-fish-rank-as-very-safe-on-new-selenium-based-standard?</p> <p>Respectfully,</p> <p>Linda S Olson Mining Claim Owner</p> <p>Here are some of the documented benefits of Suction Gold Dredging:</p> <ol style="list-style-type: none"> 1. Suction Gold Dredging removes harmful mercury, and keeps rivers clean of trash and debris. Nuts, bolts, nails, and other metal objects are captured by the sluice box and removed from the waterway. 2. Suction Dredging Season is coordinated as to not interfere with fish spawning and hatching times. 3. Suction dredging releases food trapped under the gravel into the waterway to feed small fish and fry. 4. The redistribution of classified gravels creates more spawning area for heavily populated fish spawning grounds. According to the Department of Fish & Game – “Dredging riverbeds frequently improves the habitat for spawning.”

6 August 2019

3. **Tom Quintal,
Oregon**

Gene Foster, Manager, Watershed Management
DEQ Water Quality Division
Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, Oregon 97232

Sent via e-mail

Re: Comments regarding the Willamette River Mercury Total Maximum Daily Load (TMDL) Development

Dear Gene:

Watershed/mass balance model

Connects mercury sources to mercury levels in the river network. A watershed model, which uses the Hydrological Simulation Program - FORTRAN, will simulate movement of mercury via flow and sediment routing. Some of the many industries that will be affected by the NEW mercury TMDL have serious concerns with the Fortran Simulation Program. Oregon miners do not trust this program either?

Oregon has a mineral trespass law, ORS 517.130 and most all studies indicate the people doing stream sampling for studies DEQ is using to list streams in the Bohemia mining district as 303d have committed mineral trespass. Miners with Federal mining claims were not notified or gave permission for valuable minerals to be disturbed or removed from their claims when stream studies were done. Mercury is considered a valuable mineral.

ORS 517.130 A person commits mineral trespass if a person intentionally and without permission of the claim holder: (a) Enters a mining claim posted as required in ORS 517.010 (Locations of mining claims on veins or lodes or ORS 517.044 (Location of claims upon placer deposits) and disturbs, or removes or attempts to remove any mineral from the claim site. Most likely legal action will be taken against folks who are responsible for this mineral trespass. A good example of mineral trespass is the study Tracing the source of mercury contamination in the Dorena Lake watershed, Western Oregon. See chart reference page 856 chart (a), (b), (c) and (d) where minerals were removed and reference page 857 table #1 for mineral elements removed for testing without claim owner's permission.

Miners are only allowed to suction dredge using ODF&W in water work schedule for 2 or 3 months when low water flows carry minimal sediment flows. 700 NPDES permits only allow 300 feet turbidity and DEQ has the ability to know where the stream locations are from GPS information when a person applies for the permit. Most miners are lucky to work a few weeks in streams during the in water work schedule.

So what is the big issue with suction dredges causing heavy TMDL mercury in streams?

Page 2

Oregon miners with Federal mining claims will require financial reimbursement for the loss of their Federal Mining Mineral Estate and this mineral is considered personal property. The 9th Circuit Court USA v. Shumway. Case 96-16480: Date file 12/28/99. Now BLM will use the Prudent Man Rule to

invalidate a claim if the claim is not able to show a profit. This rule determines value based on whether a person will consider investing time and money to develop a potentially viable mineral deposit. The U.S. Supreme Court concurred with this definition in 1968. The claimant is required to show a reasonable prospect of making a profit from the sale of minerals from a claim or a group of contiguous claims.

It is not possible to retain a valid BLM claim using hand operated mining equipment with the listing of the streams in the paragraph below as 303d; because it will not allow DEQ to issue 700 NPDES permits for a miner to move enough stream material. Oregon will be responsible to reimburse about 30 plus claim owners for their personal property loss in the Bohemia mining district for thousands of dollars?

Sharps Cr. is a secondary transport pathway stream for mercury according to page reference 858 figure 5 for the Dorena lake watershed study. This stream should never require a 303d listing?

The streams listed below in the Bohemia mining district will require the state of Oregon to financial reimburse claim owners if DEQ list these streams 303d. Mining according to the studies DEQ is using only shows 1% of the Mercury load for the Willamette basin streams. Please justify how mining is a mercury issue?

Also within the aggregated wastewater sector, DEQ is proposing to prohibit discharges from suction dredges under the General NPDES 700PM permit in streams with known mercury contamination from historical mercury and gold mining activities. Studies in Oregon, California, Nevada, Wisconsin and Florida have shown that mercury in stream beds is disturbed, mobilized and methylated by suction dredging (Fleck, et al., 2010; Gray, Hines, Krabbenhoft, & Thoms, 2012; Humphreys, 2005; Marvin-DePasquale, et al., 2009; Marvin-DiPasquale, et al., 2011). Soils and stream sediment sampling in the former Bohemia Mining District indicates high concentrations of mercury. Mercury concentrations found in stream-side soils range from 13 mg/kg to >50 mg/kg and stream sediments in Brice Creek, Champion Creek, Sharps Creek and the Row River upstream of Dorena Reservoir range from 0.14 mg/kg to 1.34 mg/kg (Hygelund, Ambers, & Ambers, 2001). These streams are tributary to the Dorena Reservoir, which is 303(d) listed for mercury and has fish advisories for mercury contamination in place. Therefore, upon renewal of the 700PM permit, DEQ will prohibit suction dredge mining in locations in streams that flow from the former Bohemia Mining District and are tributary to the Dorena Reservoir (including Row River, Brice Creek, Sharps Creek, and Champion Creek). While suction dredge disturbance of mercury laden sediment in these streams is currently intermittent and releases and methylation potential are not quantifiable, these prohibitions in this known historical source area will add to reductions achieved throughout the basin toward the 10 percent aggregated WLA for the wastewater sector.

Page 3

By far, the greatest source of mercury in the basin is from atmospheric deposition, which originates mainly from national and global sources. For example, mercury that is air deposited from industrial and coal burning power plant emissions. Once mercury is deposited on the landscape, the major pathways to streams are erosion of sediment-bound mercury and surface runoff. Miners for free using a suction dredge removes mercury so why would DEQ list

Bohemia mining stream tributaries with 303d listing when the state has no other way to remove mercury from this environment?

As miners remove sediments, sands, and gravel from streams and former mine sites to separate out the gold, they are also removing mercury. That is a benefit to the state?

A 4-inch gold suction dredge captures 98% of the mercury it sucks from a stream and is a great benefit to streams? Explain why this is not the best way to recover mercury?

The suggestion floured mercury, regardless of the source, would remain suspended for miles below the dredging site is not supported by any evidence from studies I have found?

Mercury is one of the heavier elements and the physical/chemical facts would indicate that suspended mercury would not travel farther than a measured dredge plume currently limited by DEQ's 700 NPDES permit to 300 feet. That short distance to settle mercury out would not cause significant harm to streams?

The density of mercury is 13.534 g/cm³. Therefore, all other things being equal, the greater density (weight) of mercury would insure that it would fall out of suspension before the end of a dredge plume. Another reason to use a suction dredge and DEQ to not discriminate against small scale mining?

Suction dredges provide a net environmental benefit by removing nearly all mercury they encounter. Who else in government will provide this service for free?

If not removed, mercury will eventually migrate downstream to areas where it is more likely to be converted into methylmercury. Another benefit to the state by miners using suction dredges?

Mercury methylation happens under anaerobic conditions not found in running streams and rivers. Suction dredging even adds more oxygenation that benefits streams. Removal of elemental mercury before it can be converted, by bacteria, to methylmercury is an important component of environmental and human health protection and is provided as a secondary benefit of suction dredging. Miners are doing this work for free to the state of Oregon?

Page 4

DEQ regulates a suction dredge as a point source discharge with the 700 NPDES permit, so a dredge point source would contribute significantly less mercury to streams than nonpoint sources. Why would DEQ discriminate against one of the best tools available by using a suction dredge that removes mercury from streams at no cost?

After the order is signed, DEQ will provide a response to all comments received during the public comment period. DEQ will then submit the documents to EPA for action. Why not issue it as an administrative rule instead of an Order?

Thank you and please respond to my comments.

Comments submitted by:

Tom Quintal 1781 Sonya Dr. Salem, OR. 97317

Email: quintalt@outlook.com

<p>4. Craig & Linda Olson, Oregon</p>	<p>How can DEQ condone contamination of the waterways in the Applegate River Spawning Gravel Restoration Project (https://www.facebook.com/R6RRSNF/videos/2514302371941049/) and still justify shutting down gold dredging activities in the Bohemian Mining District in the Willamette Valley Basin?</p>
<p>5. Craig & Linda Olson, Oregon</p>	<p>Holding a comment period and a few structured meetings is NOT "consultation" simply because DEQ does not recognize that miners have "rights" so the organization sees no need to bargain.</p> <p>Only complete idiots (or someone with an agenda) could possibly argue it's better to leave 100% of the mercury in the stream than risk the reintroduction of maybe 2% while safely removing (for ever) up to 98% (and at no cost to tax-payer)! Same thing with LEAD.</p> <p>How many BILLIONS has this country spent removing lead from just about anything? And yet every year we issue millions of fishing licenses that allow people to throw lead into the water and do not make them retrieve it if lost.... and at the same time ban the only people capable of removing the lead!</p> <p>I am an Oregon placer miner, property owner and tax payer in the state of Oregon disputing the Department of Environmental Quality's (DEQ) recommendation to shut down suction dredging and motorized mining operation as the best management practices solution for reducing mercury TMDLs within the Willamette basin.</p> <p>While DEQ preaches reducing TMDL mercury exposure in our waterways and soil?? Flu vaccine contains 25,000 times more mercury than is legally allowed in drinking water (Posted by Erin Elizabeth Oct 8, 2016)</p> <p>While the Department of Environmental Quality (DEQ) recommends leaving the elemental mercury undisturbed in the soil and waterways, this is not realistic. If not removed, such naturally occurring mercury will slowly but eventually migrate downstream (whether we dredge or not dredge) due to seasonal storms and natural winter water flow. Previously used efforts of removal by 'public agencies' and 'at the public's expense' (when such activity became a budget priority) is not a realistic or cost effective (fiscally sound) approach, and the DEQ has offered no better method of removing the mercury than what suction dredging and motorized mining has already been proven to provide, time and time again.</p> <p>How can DEQ expect to reach the 0.04 ppm rating by shutting down motorized mining when winter storms move much more sediment thru the watershed than the few miners actually dredge in any season. The holes that are dredged are filled in with the suspended solids from the stream and small cobble so it actually traps any moving mercury (if DEQ can prove there is measurable mercury at all).</p> <p>In a 1997 study of impact of gold dredging on downstream water clarity and sediments showed that water chemistry downstream from dredging operations returned to upstream levels within 80-160m downstream from the dredge. Note: Although mercury was not measured in the plumes, the heavier density of</p>

mercury being 13.534 g/cm³ compared to the density of copper and zinc at 8.94 and 7.14 g/cm³ respectively would have resulted in mercury falling out of suspension much sooner than the copper or zinc.

What is DEQ doing about high levels of mercury in fish?

DEQ identifies waters where fish tissue samples have higher mercury levels than its standard and adds these waters to the state's list of impaired waters needing mercury pollutant load limits (303(d) list). DEQ then collects additional information and conducts analyses to determine the severity and extent of the problem, identifies the sources of mercury, and develops restoration plans to reduce the levels of mercury reaching Oregon's water ways. DEQ develops Total Maximum Daily Loads (pollution load limit plans) to reduce the total amount of mercury that enters the impaired waterbody.

How long will it take to reduce mercury in our fish? DEQ does not have a complete understanding of the sources of mercury in fish, so how can they determine how long mercury will remain at present levels. According to EPA's Fish Consumption Advisories website, many waterbodies across the country, including ocean waters, have fish and shellfish with elevated mercury levels.

Show me one person with mercury poisoning from eating fish. A U.S. National Academy of Sciences report in 2000 examined the dangers of mercury and concluded that the risk of harm from the intake of mercury from eating fish for the majority of people was low. It is unlikely that mercury is a threat to a healthy adult who eats a normal and varied diet. All living organisms that evolved with the planet Earth contain trace quantities of mercury. Elemental mercury is washed into streams and the sea, where bacteria converts it into organic methylmercury, which could enter the food web. At the same time, plants and other organisms are busy converting methylmercury back to inorganic compounds. This constant cycling of mercury from elemental to organic and back again has occurred for eons. Only recently, through x-ray spectroscopy, has the type of mercury found in seafood (methylmercury cysteine) been identified.

Studies have also determined that the mercury found in seafood may be less toxic than the form of mercury on which fish consumption advisories have been based. In addition, a number of studies have found that the essential element selenium, high amounts of which are found in ocean fish, sequesters mercury, thus neutralizing its toxic effects. This may be the reason why studies have never shown an epidemic of child developmental problems in coastal populations whose diets have been comprised in large part of seafood.

In fact, the evidence shows that virtually all seafood delivers big health rewards at every age... and poses virtually no risks at any age (see the joint EPA-FDA guidance for the few exceptions).

There is overwhelming evidence that most ocean fish do much more good than harm (if any) to children, and also on the generally unrecognized, overlooked role that fish-borne selenium plays in neutralizing fish-borne mercury (See "Mercury-Fighting Mineral in Fish Overlooked in Heated Debate" and "FDA Analysis Supports More Fish for Moms and Kids").

What can you do to limit mercury in the environment?

Although mercury may come from natural sources, it is also found in a number of consumer products, such as fluorescent light bulbs, some imported skin-lightening and anti-aging creams, vehicle light switches, certain types of button cell batteries, thermostats and thermometers. You should not dispose of these products down the sink, on the ground, down a storm drain or in your garbage can. How are they to be disposed of?

The United States Environmental Protection Agency recognizes that there are environmental benefits to motorized dredge mining activities, as mining efforts effectively remove mercury from creeks, streams and rivers, extracting up to 98% of the mercury that mining equipment picks up (Agency 2002).

Modern day small-scale gold suction dredgers do not use mercury to recover gold during the operation of a gold suction dredge. While we occasionally find very small quantities of mercury, what mercury is found is usually bound to (amalgamated with) the gold. As miners dredge through sediments, sands and gravel from streams and former mine sites to separate out the gold, in addition to removing elemental mercury, they also remove lead and trash found in the waterways.

A 2005 staff report published by the State Water Resources Control Board, Division of Water Quality concluded that a 4" gold suction dredge captures 98% of the mercury that it sucks from the environment. It also noted that portions of the remaining 2% that escaped from the suction dredge was floured (i.e., in small particles) and that such mercury may travel much further downstream where it may become available for biological action by bacteria where it may be converted to methylmercury. Note: The author noted that parent material collected for the study already contained "floured" mercury along with the accumulated or puddled mercury and was not typical of areas in which gold dredges operate.

A 2007 news release by Washington State Department of Ecology, Brian Dick, manager with Ecology's hazardous waste and toxics reduction program supported suction gold dredging and their program results further supported the results of the 2000 EPA and California's Division of Toxic Substance Control program, in providing an effective method of removal of the majority of elemental mercury before it could be converted to methylmercury (by bacteria)."

The Mining Act of 1872 H.R. 36 passed by Congress and signed by President Ulysses S. Grant, Congress extended an offer that grants all U.S. citizens a statutory right to enter upon federal lands to explore and develop valuable mineral deposits. On August 9, 2019 a Miner's Petition was submitted to Stop State-Law-Based Prohibition of Mining on Federal Lands to the Secretary of the Interior by the County of Siskiyou, California's Board of Supervisors stating that Federal law preempts the extension of any state land use planning regulation or ordinance on federal lands.

Per 36 C.F.R. 228.8(h) Certification or other approval issued by State agencies or other Federal agencies of compliance with the foregoing categories of laws and regulations related to mining operations will be accepted as compliance

with similar or parallel requirements of these regulations. Operators are not required to comply with any state statutes or regulations purporting to control the use of Forest Service land where such regulation would materially and unreasonably interfere with prospecting, mining or processing operations, because state action of this nature interferes with the Congressional objectives confided to Forest Service administration under federal law and are therefore preempted.

The courts have ruled that the owner of an unpatented claim has ‘real property’ in the minerals and the right to remove them. The land itself belongs to the United States who is holding the title ‘in trust for’ the claim owner against the day that it is patented. ‘In trust for’ makes this a fiduciary trust where the Grantor (United States) is holding title for the benefit of the Grantee (claim owner), and is charged to protect the Grantee’s rights. Our mining claim grants the holder (us) with the preferential right to extract the valuable minerals within the claim, and for uses incident to that.

Historically, mining was one of the major economic forces within the Bohemia Mining District and throughout the state, utilized largely by local miners and on a small scale, individual basis. Motorized dredging has been banned in much of the state of Oregon based upon theoretic negative impacts to the fish and fish bearing streams, with little to no evidence showing that it is detrimental to their environment. In fact, activities very similar to dredging have been used to stir up compacted river beds to address fish disease concerns and provide better spawning grounds for fish species (Fish and Game 2016).

In closing, before the problem becomes even more life threatening, and as essential to protecting our environment, wildlife and human health protection, I recommend that this state commission, promote, contract and pay small-miner suction dredge operators to remove any and all mercury found in our waterways by suction dredging our streams and waterways, before the mercury can be moved further into the Willamette Basin and converted to methylmercury (by bacteria).

I also recommend that the requirement for 700-PM permits be eliminated altogether, as non-industry related, which would increase the number of dredgers in the waterways each year working to recover and reduce any elemental mercury found to be accumulating and/or pooling in our waterways.

Literature Reviewed and or Cited:

Ashley, R.P., J.J. Rytuba, R. Rogers, B.B. Kotlyar and D. Lawler, 2002, Preliminary Report on Mercury Geochemistry of Placer Gold Dredge Tailings, Sediments, Bedrock, and Waters in the Clear Creek Restoration Area, Shasta County, California, U.S. Department of the Interior, U.S. Geological Survey, Menlo Park, CA. Open-File Report 02-401

Humphreys, R., 2005, Losses and Recovery During a Suction Dredge Test in the South Fork of the American River. Staff Report, State Water Resources Control Board, Division of Water Quality.

Prussian, A.M., T.V. Royer, and G.W. Minshall. 1999. Impact of Suction Dredging on Water Quality, Benthic Habitat, and Biota in the Fortymile River, Resurrection Creek, and Chatanika River, Alaska. U.S. EPA Report, Region 10, Seattle, WA.

Rytuba, J., C. Janik, and F. Goff. 1996. Transport of Mercury in Sulphur Creek,

CA. U.S. Geological Survey, Presentation given at the USGS Workshop on Mercury Cycling in the Environment.

<http://toxics.usgs.gov/pubs/hg/abstracts.html>.

US EPA, 2001. Mercury Recovery from Recreational Gold Miners.

http://www.epa.gov/region09/cross_pr/innovations/merrec.html

WA DOE, 2007, Miners Remove Gold Rush Mercury from Washington Streams. Washington State Department of Ecology, Hazardous Waste and Toxics Reduction Program, Yakima, Washington

<http://www.ens-newswire.com/ens/sep2007/2007-09-18-096.asp>

<https://www.montereyfish.com/mercury-and-selenium?f>

<https://www.vitalchoice.com/article/most-fish-rank-as-very-safe-on-new-selenium-based-standard?>

Respectfully,

Linda S Olson

Mining Claim Owner

Here are some of the documented benefits of Suction Gold Dredging:

1. Suction Gold Dredging removes harmful mercury, and keeps rivers clean of trash and debris. Nuts, bolts, nails, and other metal objects are captured by the sluice box and removed from the waterway.

2. Suction Dredging Season is coordinated as to not interfere with fish spawning and hatching times.

3. Suction dredging releases food trapped under the gravel into the waterway to feed small fish and fry.

4. The redistribution of classified gravels creates more spawning area for heavily populated fish spawning grounds. According to the Department of Fish & Game – “Dredging riverbeds frequently improves the habitat for spawning.”

**6. M. James Fox,
Cresswell
Water Control
District, seat
2, Oregon**

Note: These are the personal opinions of the author. They have not been communicated to or discussed with other members of the board and may not reflect their views.

Why the district should not be a DMA:

The district was formed in the late 1950’s to alleviate recurrent flooding. This was accomplished by creating a diversion channel that transported most for the flow from Lynx Hollow Creek directly into the Coast Fork Willamette River and by constructing a drainage channel subsequently identified as Hill Creek. It has always functioned as a drainage system and has no customers to whom it delivers water. Following the completion of the structures described above, the district engaged in little activity. It does not actively manage or maintain the system other than the diversion structure and an associated flow control gate that regulates the flow into Hill Creek. The district has no employees, equipment, or facilities, and has limited financial resources. It possesses no technical expertise related to watershed management or drainage channel maintenance.

The district encompasses properties that are controlled by other jurisdictions or entities. Additionally, the outflow from the Creswell Irrigation Association

merges with Hill Creek. Hill Creek and the Irrigation Association provide inflow to the Bald Knob log pond, which is part of the abandoned Bald Knob veneer plant that was destroyed by fire several years ago. Outflow from the pond is controlled by a non-functioning gate structure. The district has no authority to manage this facility. The outflow from the log pond eventually becomes the inflow for ponds at Garden Lakes Park, a facility owned and operated by the City of Creswell. Once again, the district has no power to influence conditions here. Outflow from the ponds eventually joins the Coast Fork Willamette River beyond the district boundary.

Naturally occurring conditions promote undesirable water quality conditions that would be difficult to prevent. Low gradients throughout the district result in sluggish flows. Most portions of the channel lack adequate vegetation, resulting in elevated water temperatures. The district water source (Lynx Hollow Creek) is an ephemeral stream, leading to naturally anaerobic conditions wherever water remains during the dry season.

Individual property owners are primarily responsible for maintaining their portion of the stream with the district acting only in an oversight capacity.

Why the district should be a DMA:

The district is the only entity with anything approaching systemic responsibility for the entirety of the drainage system. Absent such an entity, conditions are unlikely to improve. Historically, special districts have proven to be one of the most effective forms of public organization because of their limited and focused goals and objectives.

Consequences of the district becoming a DMA:

The district as currently organized is incapable to discharging the responsibilities that would be assigned to it. Present district extents and authority are inconsistent with these new responsibilities. If the district were to be designated the responsible party for Hill Creek, certain actions would likely be required to meet the requirements of the TMDL plan because, from a functional perspective, improvements in water quality would require continuous system flows and active management of impoundments to prevent anaerobic conditions from occurring.

Two options are available to increase stream flows and maintain them throughout the dry season. Lynx Hollow Creek is the historic water source. It is an ephemeral stream. Temporary storage / retention facilities could be constructed within that watershed. This would require the acquisition of water rights for that purpose in accordance with Oregon's water law. It would also require obtaining the consent of landowners to construct such facilities, either voluntarily or through the use of Eminent Domain provisions. In all likelihood, annexation of that portion of the Lynx Hollow watershed currently outside the district boundaries would be necessary and appropriate.

The second option for increasing flow has two components. The existing diversion structure and flow gate would need to be redesigned to only divert

water directly to the Coast Fork Willamette River during exceptional high water events to prevent flooding. The second action would be to divert a portion of the flow from the Coast Fork Willamette River into the Creswell Irrigation system. This is currently done under existing water rights owned by the association and the City of Creswell. This is a small right and not adequate to maintain flows. An increase in the right would be required. Pursuing this option would logically entail assimilating the irrigation association into the CWCD. The existing diversion structure does not meet current environmental standards and would need to be redesigned and constructed. Both of these actions would lessen the impacts of the current facilities on the Coast Fork of the Willamette River.

The Bald Knob log pond and associated structures would need to be acquired by the district and renovated. The district would also have to assume management of Garden Lakes Park, currently owned and managed by the City of Creswell. Active management of these ponds would be required to prevent the formation of anaerobic conditions and might require artificial aeration and / or introducing appropriate aquatic vegetation and animal species. This would likely require the approval of the Department of Fish and Wildlife.

All of these actions require time, money, and expertise. They will also be disruptive to some peoples' lives and may create anger and resentment. Management strategies that are sensitive and responsive to peoples' concerns will be required. The question is: is it worth it?

The integrated management of the Lynx Hollow / Hill Creek watershed, if well implemented, would create a significant public benefit in addition to meeting the requirements of the Mercury reduction plan. The restoration of a healthy riparian habitat with water available year round would significantly reduce the environmental pressures faced by local wildlife and improve the quality of life for the area's human residents. In my opinion, these benefits are worth the costs involved but achieving them will require significant assistance from multiple state and federal agencies and private funding sources and a complete transformation of the Creswell Water Control District from its exclusive focus on flood prevention into watershed stewards.

7. Terrie Anicker, Northwest Mineral Prospecting Club, WA

Hi, my name's Terry Anicker. I'm from Camus, Washington. And the report has not yet been signed. Are the authors of this report licensed in the state of Washington or I mean, excuse me, state of Oregon as engineering geologists or are they just a civil engineer? Do you know?

8. Craig Olson, Oregon

My name is Craig Olson, I live in Cottage Grove. I'm a member of the Bohemian mine owners association, which is basically the oldest a service organization in the City of Cottage Grove, Oregon. With the 700 pm fight that we've been having for the last three years, and now this coming along, you guys are doing all you can to destroy that organization. I got to say, and it's not very nice when you consider a lot of us who've been doing this for years and years and even generation and generation. And only for the possibility that we may be drifting a little bit of mercury down the doggone creek when in all actuality, I've

been mining since 1991, and I have never ever seen mercury in a gold dredge. And the only place that I have ever gold dredged is on Sharps Creek, sadly to say.

So we're going to give up something that, that a lot of people consider entertainment or good hard work or just a good way to make an extra buck, just so that we have a possibility of bringing your parameters down from the 1% sliver that we're in in your pie chart. Once again I'd like to reiterate to you, in California the Sierra Club is using dredges to remove mercury from the streams and rivers and are getting paid by the state of California to do so. This seems silly to me, it seems to me that you guys are taking our sliver and you're going to squeeze it for everything you can get out of it. You've already raised our dredging permits, so a lot of people can't even afford the doggone thing. I'm a little bit resentful, I got to say, at the last meeting I felt like maybe we had a shot at maybe talking some sense into you folks.

But after the way this one is started, I don't see that. And I'm sorry to say that. Sometimes things aren't as free as you guess you think they are I guess. But this is awful sad. 1903, that's when the Bohemia Mine Owners organization came into existence, 1903. And if you don't have that little gold hanging out there for somebody to reach up and grab, or have a chance to find, this organization is not going to have 300 members. It's going to have two or five or 10. We've all seen organizations going along like that.

That means 1,500 students will not be able to learn how to pan for gold at the outdoor schools in our local area. That means that 3,000 kids that go to the fair won't be able to pan for gold at the Bohemian mining days and the western Oregon Exposition. They won't be able to learn these things that are a part of the culture of Oregon. This is part of our heritage. You guys have basically showed us that you are by dammit going to come after it and going to get us out of the creeks. It's frustrating. I'm sorry I don't live your politically correct life. I'm sorry that I like to go out and have fun out in nature. Actually, I'm not sorry for that.

I just hope you guys will consider a real plan besides pulling miners out of the rivers and pushing on all of these smaller whatever you want to call it on the private sector. I hope you will hold the people in municipalities responsible for their part of this thing, although we all know that costs more taxes and we all hate to pay more taxes, but just picking on one little handful group is not the answer. That's helped people get mad. That's how people get tired of the government. That's how people quit dealing with you folks. I'm sorry if you feel bad at the end of this. I just hope you'll find a real plan with some real answers because taking the mercury out of the creek is part of the solution. Thank you.

**9. Clark
Niewendorp,
Northwest
Mineral
Prospecting
Club**

Thank you for letting me speak and comment. I'm Clark Niewendorp with Northwest Mineral Prospecting club. And I would like to address the natural occurring levels of Mercury and ask a few questions and clarification if I can. I have been able to find three sources of analytical data for mercury throughout the Bohemia district. Those sources are one from EPA. It's 2005, and that's Marcy, I believe this is one of them. The other two are from the USGS, one study that DOGAMI in coordination with USGS and did rock chips or did stream sediment, and they did it at areas two samples locations in the coastal fork Willamette, next two are in Bohemia, the other one is actually USGS and

old database and it contains rock chip.

What those, what that data shows when you plot it up is the background levels of mercury will never, ever go below your target levels. In fact there's one road cut that they measured it had 12.5 ppm mercury in just the authorization alone. The stream sediments are .1 to .3 and even higher in some cases. In fact Boyd Creek, if I can go there, has been sampled. It has no mining in it and that's between Bohemia's western boundary and Dennis Creek, or not Dennis Creek, but the mercury deposits just to the east it is .33 parts per million mercury. That to me says that anytime that you're in the vicinity of these or deposits, regardless of they've been mined, natural processes, erosion, weathering will introduce sediments into those waterways and they will contain mercury. Now what I have not been able to find is how much mercury in our creeks that we're talking about now are wet and dry and for how long? And that's what we're talking about is whether it's oxygenated or an aerobic systems. And Dorena is an excellent example of that. When the Corps allows the water levels to go up and down, they are in fact methylating mercury season after season. So I would like to see data provided to us on your website that gives us all of your analytical data. I don't give a damn about your fish stuff but I would like to see the actual streams, rock and other things so we can determine or have some explanation what the background levels are there we'll never clean it up. And I think I'll leave it at that.

10. Dennis Hebard, Bohemia Mine Owners Association, Oregon

Okay, my name is Dennis Hebard. I'm a gold miner in the... on Sharps Creek. I own a mining claim. Well the characterization of the Bohemian mining district is misleading. Even before building the Dorena Dam in 1949 the valley was a hub of activity with farming, a railroad for hauling people, logs and ore – mine ore. Valley closely resembles the nearby Mosby Creek area that runs parallel just to the south. There is no dam and is mercury impaired on the 303(d) listing. After 70 years of blocking to 150 square mile upper Row River watershed, the lake itself has become a source of mercury. The Bohemia Mining district is on City Creek side of the mountain. Champion Saddle to the north isolates the Champion Mine. In 2009, remediation was completed with removal of waste rock and a meandering wetland between settling ponds, testing over the next five years showed a heavy... a reduction in heavy metals and mercury by as much as 94%. Sampling shows they found no elemental mercury source, but rather the ore minerals themselves of those species of mercury. HgS cinnabar made up 64% of the stream sediment. HgS is generally resistant to chemical and physical weathering, but nominal pH (Gray 2003) and therefore is not expected to be a primary source of dissolved Hg²⁺ ions in the aqueous stream and lake environment. There has been no elemental mercury or liquid mercury found during dredging that I've ever found that many miners say there is none in the system. Mostly this is a rock based mercury, which is resistant to weathering resistant to any type of a name. When we dredge we don't see mercury. Not there. All right. Thank you.

11. John Becker, Northwest Mineral Prospecting Club

I'm John Becker with Northwest mineral prospectors club. Thank you for allowing me to comment. I'd like to say that I'm extremely against DEQ's prohibiting suction dredging in the tributaries of Dorena Lake. You've only sold 31 dredge permits year to date. Seems to be a dwindling resource of revenue for you. Dredgers are the only ones that remove lead and other heavy metals, mercury being one. I have seen mercury sucked through my dredge and captured in the sluice box. And it was disposed of legally and properly. Yet you

want to shut down dredging for the small part of what is being done right now.

Suction dredging also oxygenizes the water. By turning it over and sucking the material up off the bed, cleans the rocks, which the fish need to make their nests and lay their eggs and dredging also lowers the temperature of the water. A lot of that was also in the Joe Greene and Claudia Wise dredging study, which DEQ did not take a look at, hasn't looked at. A couple of other things that I would like to see provided to your website, so that we can look at, is what is the link to suction dredging contributing the mercury in the fish in Dorena lake. Where is your link? Where is your proof? Where did you study?

Mercury was not... was stopped being used in mining in 1923 -- almost a hundred years ago. So I'd like to see what your statistics are on the amount of mercury used in mining, Bohemia mining district, that area above Dorena Lake, versus natural occurring mercury in that same area. I'd like to see those statistics and then proof -- studies, whatever. Thank you very much for letting me comment.

**12. Dick Secord,
Bohemia Mine
Owners
Association,
Oregon**

I'm Dick Secord. I represent the mining association and am an American citizen. I'm the deed holder to the Champion Mine/Evening Star Mine. I've been through the Black Butte Mine. We followed your mercury arguments here in Eugene for over 25 years. This is a very new approach, I commend you for coming from this angle. You want to pull the dredges out of the crick because they stir up the rock. What, three months out of the year, through the winter storms and rains the rest of the year, the creek rocks and rolls hard. I didn't hear you have any plans stop that. The amount of rock they move is minuscule to compare it to that. The naturally occurring mercury that supposedly gets in from rain in the creek or however bicycles going through -- the four wheelers -- whatever. You haven't even mentioned that. I don't care. You... I lost it there for a second. Sorry. I don't know what else to say. Except you're barking up the wrong tree here. Pulling the dredgers out would be a big mistake. They do clean the creek, not just getting the mercury -- garbage, clean the campgrounds, we're beneficial to the forest. A lot of the stuff I've seen presented from different groups is all old days. Stuff that does not occur today. We would not allow it to occur. No. Don't throw us out, doesn't make any sense.

**13. Tasha Webb,
Bohemia Mine
Owners
Association,
Oregon**

I'd like to start by saying that the amount of time from being notified to the end of the comment period is too short. That is relevant to the fact that I will be asking for an appeal for more time. I'll be contacting our legislators, as well as looking into filing a tort claim with the department of administrative services as Bohemia Mining district was not included in the decision making process.

The amount of mercury found at Bohemia Mining district is insignificant, but even assuming that it wasn't insignificant dredging removes Mercury at an extremely relevant 98%. It is a solution. It takes mercury and lead out and it introduces no new pollutants. It's important to consider solutions and include dredges on the list of solutions. You guys are not, or you haven't shown us that you have any solutions as far as mining goes, you just referred us back to all of the other, non-point I think.

Miners have offered to collect and dispose of mercury without compensation. The lack of consideration to include minors in the discussion of banning suction dredging along with a short amount of time is relevant and points out that I will

highlight when I go to the legislators and take further steps to prevent or to protect our rights.

**14. Ron Anicker,
Northwest
Mineral
Prospecting
Club**

I am with the northwest minerals and it would seem to me that you won't or don't have a lot of data from the areas that you're restricting the dredges on or at least you won't until after you've done the restrictions and get your... yeah so you have no baseline to see what effectiveness you're going to have when you're after the restrictions are in place. And that's my comment.

**15. John Gilbert,
Bohemia Mine
Owners
Association,
Oregon**

My name is John Gilbert and I live in Falls City, Oregon. And here we go. I've been a gold prospector and a gold dredger for over 30 years. I've lived in Oregon my entire life and I'm proud to be an Oregonian. It saddens me to see this state heading in the direction it has been for over two decades. I have a personal stake in this issue. I love to dredge to enjoy my gold claims in the Bohemian Mining district, of which I'm a member. I have followed all the extensive dredging rules so I can dredge my claim even if the new regulations are unfounded and based on biased studies funded by environmental groups that are so far left from a center government it is unnerving. I'm one of only 156 registered gold dredgers in the state of Oregon. State of Oregon has taken most of the waterways away from us gold dredgers because of ESH -- essential salmon habitat. Now you want to take away another area too because there's something that neither you DEQ or I can control. 94% of the mercury is natural in the environment by your studies.

I was informed that there was going to be a meeting July 15th in Springfield. At this meeting all the miners were invited that hold 700 pm permits for section gold dredging in the Willamette basin. The permittees were told that this would be an informational meeting to provide information and answer questions on the proposed TMDL and DEQ 700 permits. This meeting was well attended and many agencies were represented from the state. I would have not known that this meeting was taking place if I had not been notified by the president of the Bohemian mind owners association. I have three mining claims in the district and I would assume that my partners and I would have been invited as stakeholders. It was apparent right away that the speaker was ill prepared or misinformed by her peers, my 16 year old daughter even saw through the misinformation.

I hope that there is justice, fairness and inclusion in future meetings -- maybe even trust. I have many questions to ask and I'll try to keep them short and to the point, but it's difficult when you are as passionate about this topic as I am. When your rights are being proposed to be taken away and some people or some agencies have been using this information to paint you as a bad steward of the place you love so much, it can be very frustrating. In fact, I see myself as a true environmentalist. I spent the entire year picking up after others that litter in our forests. I make sure to take all the lead bullets and fishing weights I find in the river home and I also notify the forest service is there if there is any activity that may not be what is best for the safety of other fellow users of the mountains we love.

I have three valid federal mining claims, all of which are in the Bohemian Mine district. I do not understand why the DEQ does not include miners in the decision making process of resolving the issue instead of an all-out ban. There seem to be several ways that things can change for the better without a ban. First off, let's have a conversation on what we really do and make sure everyone understands what we really do. That alone would be refreshing. Many of you at the meeting and Springfield did not even understand the simple mechanics of a gold dredge. It's very problematic to have a conversation with someone that does not understand what they're talking about, but believes that what you are doing is the cause of the problem. We need to have a base to begin a conversation. I think we all agree on that.

We as miners need to have your boots on the ground. If we are to be better stewards or have better best practices, you should be involved to see if they can be implemented or not. Maybe they are so far out in left field that you might not even recommend anything at all. At the meeting we were shown a pie chart. It stated that 94% of the mercury is from natural causes. 6% comes from humans. This includes public and private. That 6% mining causes 1% we were told that gold dredging is .007 of that 1% this is a concern to me. There should be a red flag for you as well. At Springfield, we were told that the current levels are 361 grams a day and the goal was 42 grams a day. This would be an 88% decrease.

This is an unreasonable goal and if you don't feel that way, you're at least looking at the wrong group to totally ban. We haven't even had a study done on the reduction of gold dredge permits since Senate bill 838 or Senate bill 3 that went into effect to see if there's been a reduction of any levels of anything specifically mercury that I'm aware of. Maybe we have already reached a lower level. How do we know? I cannot be that smart, again a common sense approach seems to be an order after all the mind-numbing reports that you DEQ and EPA supplied us as evidence that has been peer reviewed by some gospel from another state, from people that have been fraudulent in their findings and that some of the facts that are being used from their reports that have been done 20 years ago. I'm not saying that some of the information is not accurate and still some of it has significance, but let's compare apples to apples and not cherry pick information.

If municipalities can dump millions of gallons of raw sewage in the Willamette River and ask for a variance from many of the reports that I read that you supply to us, it stands out that new construction road building repair, new and old storm drain runoff and septic systems are the leading pollutant causers. With this being said, why was there not representation of the mining families at the table on the variance advisory committee? Again, it looks like to me that there was another missed opportunity by the DEQ and the EPA to extend an olive branch to the mining community of Oregon. Before I get browbeat for that comment, let's look at who's on the committee for a moment. There are eight members, two alternates, two DEQ representatives and two EPA advisors. The members include two public agencies two representing commercial fishing, one from the confederated tribes and one environmentalist group. I don't see one very important stakeholder at the table and that would be a representative for the mining community. In no way do I want to sound negative, but there are some things that are glaring to me that my fellow prospectors, miners and

dredgers -- Yes, all of us we're a family. Every agency has a driving mission, a goal, something that they want to get done in your own words, and I quote, "Selection of priorities should be driven by the greatest opportunities for achieving pollutant reductions." Unquote. Another quote in the literature that we were given, it was painful. "The pathways that mercury moves through in the environment are complex and it is difficult to fully represent all of the pathways and models" unquote. In the literature provided there were three components of the pathways of mercury or approaches and these were hydrological simulations, which in layman's terms means when the winter rains come down and change the whole entire river.

One is the food web, which we all understand what you're talking about. Your methyl ethyl going from the microbes to the fish, to the fish to humans and the mercury translator. Each of these can be mitigated to control. I know, I found it in your own literature and yes, with a full blown ban or without a full blown ban of dredging sediment that was analyzed show each time that high levels of mercury is shown when there is a winter of huge rains that happens every 10 to 20 years. The food web issue with the fish can be possibly resolved by your own data if the water was regulated differently by the Army Corps of Engineers. And the Mercury translator issue, could be over time, reduced simply because there has been no active mercury used in mining since almost the turn of the century. These numbers should keep trending down unless there's a significant disturbance such as a hundred year flood. Dredging for the limited season that we have in the mining district of only a few months. It's another reason much of makes little or no sense. One paragraph and I'm done.

Let's take the time to look at our unique situation and come up with a plan that is realistic, attainable, and allows everyone to learn from the past and have an open mind about the future. I was not mining in the early 19th century. I'm not to blame for the practices that were not the best for the environment. But I can help mitigate the future impact and still enjoy my legally owned federal mining claims without there being just short of a takings of my claim.

**16. Robert Rasey,
Northwest
Mineral
Prospecting
Club**

Robert Rasey, Northwest mineral prospectors, I go all over the state, without knowing where the samples were taken as well as how many were taken and over what timeframe that these samples were taken, how do we know where the mercury is in the watershed of Dorena? Okay. I have a been on my claim on Clark Creek for well over 20 years, I've yet to find a single microbe of mercury in my dredge at all, which tells me that I do not have mercury on my claim. If I did, then it would be in my sluice box.

So, and we'd like to know what studies were actually used to determine the mercury content of the water if they did not do studies on the watershed of Dorena Lake, but they came from California where the waterways the same with the mercury content beforehand the same, or is this a report that was put together to justify something that was going on up there? So we'd like to see a total study and where it came from, who did it, at what time, and if it hasn't, then we should put on hold the exclusion of the 700 permits until such time that decent reports and studies are done to justify and prove that there is mercury there and it is affecting the fish.

I also want to know how is the mercury content of the fish determined. Were

they filets? Were the filets checked? Or were they ground up together -- guts and everything together, which saturated everything with mercury. Because I do know that mercury will retain into the intestines of the fish. Most people throw those away so there's less. So and without repeating myself a dozen times, I'll go ahead and quit. Thank you.

**17. Tom Pepiot,
Bohemia Mine
Owners
Association,
Oregon**

Hello, my name is Tom Pepiot am a federal mining claim owner in the Bohemian mining district and the president of the Bohemian mine owners association. Our Association has 276 members. We do a lot of community activities, teaching Bohemia mining days, panning for gold, boy scout rendezvous and thousands of students at outdoor schools. Also we do scholarships for the high school. First off, I want to thank you for hearing my testimony and hope that this agency takes all the comments and those directly affected and the dire consideration with your decision making.

I want to know why mining associate representatives from our district or any other was not included in the advisory committee. We see that federal state agencies, landowners, agriculture producers, fisheries, cities and environmental groups. We're all on the membership list. No mining associations and no mining district representatives. We should have had a seat at the table, especially when involves the prohibition of suction dredge mining and the Bohemian Mining district.

I have been mining for 31 years, have seen little to no mercury in my section dredge while mining on Sharps Creek and Brice Creeks. The mercury, if it was there, would catch in the upper section of the section dredge where 98% of the gold is collected as well as mercury. The lower sections of the has been built to collect flower gold would have some trace of mercury and it didn't. Myself and many other experience these types of situations on site evaluations frequently, and we all come to the same conclusion. No Mercury, we don't use mercury. We collect it if it's there and we find it, we dispose of it properly. I have read through your literature and it seems that these studies were done without claim owner's knowledge. I have been told that none of the studies you referred were initiated by DEQ. DEQ did not participate in them in any way. Instead as with most issues, DEQ evaluates you collect all the available studies that you could find which have been published in peer reviewed literature and use the information and the theme as the best available information from which to make decisions. The question is could they be flawed in one way or another? Maybe. We should have been notified when and where the studies were to be taken and was not. Therefore, this is considered mineral trespass if it is on a federal mining claim. And each claim owner within the mining district can claim that. The dredging that occurs in the Bohemia mining district is at best occasional. Mining claim owners suction dredgers work and mine on the weekends or when they have spare time. The 700 permit that has been listed in Bohemia district as and location are not in the local area and may not even use the permit and the district depending on where they're at, at the time, which creates a false claim that there are 28 permit holders that only dredge in the Bohemia district.

In fact, when a very small handful even do dredge in the district and move very little material which DEQ has records of We as claim owners have the responsibility to profitably produce from and maintain our federal mining

claims to keep it active and the only profitable way is to remove the gold from the creek bottom. This is a suction dredge using a sluice box and the pan is not a practical method of production. If the mercury has such a problem, then we need to find a way to remove it from the water bodies -- that's it -- as suction dredging accomplishes this by removing eight 98% of the mercury In the meantime, DEQ need to allow us to dredge, remove the mercury if found and require the proper disposal of it.

Our dredgers only operate a short period of time and we work in slow moving waters. Normally the turbidity plumes fall out of the water columns and the short distance downstream. While in the winter and spring high waters pose a high potential to transport materials downstream in the reservoir. Wouldn't you think that removing it before it does that would be a good idea? Which storm events are shown to be within the mercury levels in the lake increases through the years of floods as shown in your studies.

In the conclusion, we know storm events move material downstream, which may or may not contain mercury. No matter if we continue to dredge or if we're prohibited to dredge, the mercury levels are going to increase or decrease due to Mother Nature. We are not the problem. We are the solution. Instead of prohibiting suction dredge, find a way to keep us in the water. Thank you.

18. Scott Atkinson, Northwest Mineral Prospecting Club, WA

This is Scott Atkinson. I am the president of Northwest Mineral Prospectors. I have been involved in small scale mining since 2006 -- when I came from Trout Unlimited in the 80s -- when we dealt with Washington Fish and Wildlife on the fish problems and the lack of fish available for the fishermen. In 2006, I became a small scale miner. In 2007 I began working with the state of Washington Fish and Wildlife, mining organizations, forest service, tribes and other groups to develop the mining regulations in the state of Washington. We spent two years working on those regulations to protect fish, to protect the environment and to develop regulations that were feasible to allow the mining community to keep working.

In Oregon, in 2007 or 2008, we met with DEQ on the 700 permit about being issued with additional regulations and restrictions. Again in 2012, or every four years, the permit was reevaluated and we've been battling with DEQ and the state of Oregon on restrictions to our mining ability in the state of Oregon in 2000... or whatever that was, we had the governor's work group about two or three years ago... We had a battle that started the day that we entered the office down in Salem. First off, we were told that mining law was not to be spoken of. We're not ever able to protect our mining rights as miners. We were not allowed to emphasize what Congress has instructed the states to allow and on federal lands to allow the free and open exploration for prospecting and filing claims to do mining in any fashion.

Senate bill 838 came out and put on burdens on top of the dredgers in the state of Oregon. Senate Bill 3 came out and at the governor's work group, the people from the state came up and said, "Well, we need to protect freshwater mussels." And then they said, "We need to protect lampreys." Because all of our other effects are falling like the spotted owl did, because the miners were not effecting the Coho Salmon, which spawn considerably further down in the watersheds below where the mining claims were. So the state came up with an

idea that lampreys needed to be protected as a further effort to shut down mining in the state of Oregon. I'm guessing that about 85% of the state of Oregon is now shut down to mining. So now we have an issue of a particular watershed that the miners are 7% of 1% of the overall effect of the mercury in this particular watershed. 7% of 1%, which is one 10 thousandths of an effect.

Once again, the miners that are the dead bullseye center of the target. It doesn't matter what kind of science we present, doesn't matter what kind of evidence we present. You guys run out and grab anything you can from California, which is most of the science from California is developed by lunatics and environmentalist. It's false. It's biased. And it does not have true science in it and support. The environmental groups have used some of the false science to shut down mining in California. While at the same time the Sierra Fund obtained an \$8 million grant to go out and dredge mercury out of a reservoir -- using a gold dredge. Now at the miners can't go out and dredge for free and collect mercury. Why should somebody from an environmental organization get \$8 million to go out and collect an ounce or an ounce and a half of mercury out of a reservoir? There's fraud there. So now we are looking at the DEQ and the first item on your agenda is we're going to ban the miners from working in the Bohemia watershed above Dorena Reservoir.

It's already been repeated over and over and over again that we are the resource to help collect the mercury out of the watershed. And I'm going to read a short couple paragraphs here. That we keep referring to about selenium. "As long as you are eating fish that contains more selenium than mercury, the amount of selenium in the body will always be in plentiful excess of mercury. That means that these essential seleno enzymes are never inhibited to a meaningful degree. Fortunately, the vast majority of fish, most people consume, have more selenium than mercury. The exceptions are pilot whale shark tilefish, King Mackerel and sword fish. Unfortunately the well-documented protective effect of selenium is consistently ignored in both the medical community and the media when reporting on potential harms from fish consumption."

Now you're talking about 23 meals a month of eight ounces of fish per month. Unless you're in a minority organization or a minority civilization in the state of Oregon, nobody in Oregon eats 23 meals a fish a month, except for select families or select groups. The medical community and the media, when reporting on potential harms from fish consumption, this is almost causing certainly causing harm as it has led to advising pregnant women and young children to eat less fish when we should instead be telling them to eat more fish. Because of the selenium.

Many good speakers have asked questions and commented. Tonight we again beat the same drum. DEQ, again puts the miners and the mining community in the center of the target. And the more the state can shut down mining in the State of Oregon, you're complicit with the environmental groups and accomplishing their goals of shutting down any activity out in the wilderness or in the woods. Doesn't matter who's doing it. We are just a small group. We are being convicted and tried without a defense, without any justifiable evidence. And that's all I have tonight.

**19. Tom Quintel,
Oregon**

Tom Quintel. I'm from Willamette Valley Mining Association, government affairs. Some of the points I wanted to talk about the other Tom has already done. But I don't know why DEQ refuses to understand, I guess why the federal mining claim is real property. Okay. Just like your home. Now that case, you should look it up, it's US versus Shumway. And that was decided in the ninth circuit court. Now that's an important thing because here's why I say that. So you're going to shut down -- basically from the information I've seen on your studies that you presented, you basically pretty well determined that, Bohemia streams -- Brice Creek, Sharps Creek, Martin Creek, all those streams up there -- are basically putting a lot of lead or mercury actually into the Dorena Reservoir. And the Rogue River and so forth. Now, one of the things that really bothers me about this, as I was looking at the Dorena Lake studies that were done by Alpers and Alpers and Hygelund. Now we do not have, and I've already emailed them for the information, we do not have specific mileposts where the studies were done on Sharps Creek for one and or GPS locations. So how do we know that these are real true studies? I mean, to me they're bogus. In your studies that also shows that this is a secondary pathway for Sharps Creek. Sharps Creek should never be listed in a 303 setting, ever. Now they show maybe some of the other streams as having a little heavier mercury, load, but Sharps Creek doesn't. And so to just group the whole group, in the Bohemia district is just crazy and I don't know who comes up with this nonsense. It just makes me mad. The other thing I want to say is, we do, Tom mentioned it, we have a mineral trespass laws called ORS 517.130. Every one of your studies are done in violation without notifying the claim owner because they're stealing mineral property. Mercury is also a locatable mineral, so they've basically taken gold, silver, lead, zinc -- if you look at your Chart Table One, chart, I think it's A, B and C -- look at those charts.

Basically what they've done is they've gone in there, they've ripped out the minerals without notifying the individual claim holder. And that is a violation is prosecutable and we're looking into that by the way, and I've also notified Alpers and Alpers with an email yesterday about it. So I think you guys need to pay attention to the laws of the state of Oregon before you start accepting studies from people who trespass. And I told your director the last meeting in Springfield that I think what I'm going to do if you take and basically destroy our mineral right by listing some of the streams as 303, I'm going to come up to his home and I'm going to camp out in his front lawn and I'm just going to meet happily camping out. He's got personal properties. I'm going to take it from him. And he said, "I take your point."

Well, this makes us very angry when you guys just arbitrarily and capriciously just say, "Well, we're going to list a whole subbasin here and we're just going to destroy your mineral property." I'm just wondering who is going to compensate the miners that have claims 30 plus claims up on the Bohemia district? Who's going to compensate those people for the loss of their property? Now that is a serious concern that you folks don't even consider. You just say, "Oh, we'll just make this law and we'll take that land, that area away from them and we don't have to worry about it." well, I'll tell you what I'm gonna do. You're going to see litigation coming and it may be class action because we're not going to stand for it. You're not going to get away with it. You can give us all your phony studies and some of them are really bogus. That Tetra Tech study is really interesting, isn't it? That FORTRAN model they use as goofy and you look, look at what the Oregon Farm Bureau says about it. None of these folks

trust what you guys are doing. And basically, I guess that's about all I have to say. But this, this kind of nonsense has to stop. We as miners are not at the table when you guys make a lot of these decisions, the last permit was a joke. You let the environmentalist come in and make all the rules, all the new limitations they put us. We can't even use your dumb permit anymore. They're so restrictive that it's basically hard to... almost impossible to comply with. So you need to get miners involved. When you start doing these things, you make things as an order instead of administrative rule, so you don't have to, apparently feel you have to call in important stakeholders. So it's just you guys are out of control, just like EPA right now and I hope Trump reigns this stuff in and maybe we'll get some good results out of it. So that's all I've got to say.

**20. Linda Olson,
Oregon**

Hi, I'm Linda Olson. I am a federal mining claim holder, property owner and tax payer in the state of Oregon, disputing the Department of Environmental Quality's recommendation to shut down suction dredging and motorized mining operations, as the best management practice solutions for reducing mercury TMDL within the Willamette basin. I am not sure how holding a comment period and a few structured meetings -- is not consultations, simply because the DEQ does not recognize our rights. So the organization sees no right to bargain with us. Well, Department of Environmental Quality recommends leaving the elemental mercury undisturbed in the soil and waterways. It is not realistic. If not removed, such naturally occurring mercury will eventually migrate downstream, whether we dredge or not, due to the seasonal storms. In 1997 study the impact of gold dredging on downstream water clarity and sediment showed that water chemistry downstream from dredging operations returned to upstream levels within 160 meters downstream from the dredge. Although mercury was not measured in the plume, the heavier density of the mercury being at 13.534 grams per cm³ compared to the density of copper and zinc at 8.94 and 7.14 gcm³ respectively would've resulted in the mercury falling out of a suspension much sooner than the copper and zinc.

So how can DEQ expect to reach the .04 ppm rating by shutting down motorized mining, when winter storms move more sediment through the watershed than the few miners actually dredge in any season? The holes that are dredged are filled in within the suspended solids from the stream and small cobbles, so that actually traps any moving mercury. If DEQ can prove that there is measurable mercury at all. And what is DEQ doing about the high levels of mercury in fish? DEQ identifies the waters where the fish tissue samples of higher mercury levels than standard and adds these waters to the state's list of impaired waters and they developed the total maximum daily load to reduce the total amount of mercury that enters the impaired water bodies. All soil disturbances would be shut down, not just not just suction dredging by what you're putting in place, any ground disturbance. So you're actually shutting down all mining period.

There is no monitoring required for the 700 pm permitting and I don't understand the need for a permit when we actually benefit the environment. We are environmentalists. So show me one person with mercury poisoning from eating fish. Studies have determined that the mercury found in seafood may be less toxic than the form of mercury in which the fish consumed advisories have been based. And in addition, a number of the studies have found that the essential element selenium, which we've talked about several times tonight,

high amounts of which are found in ocean fish sequesters the mercury that's neutralizing the toxic effects. There is no solution to removing the mercury from the equation. In fact, the evidence shows that virtually all seafood delivers a big health towards rewards at every age.

Modern day small scale gold section dredgers do not use mercury. We occasionally find very small quantities of mercury and in what mercury is found from is usually bound or amalgamated with the gold. A 2005 staff report published by the State Water Resources Control Board Division of water quality concluded that a foreign suction dredge captured 98% of the mercury, as previously stated. And this information is not new. It's actually forwarded to you on every time it comes to the table. And it's still ignored by DEQ. In the 2005 staff report, it also noted that portions of the remaining 2% that escape from the suction dredge was floured and at such mercury might have traveled further downstream or it might've become available for biological action by bacteria. But the author noted that the parent material collected for the study already contained floured mercury along with the accumulated and puddled mercury, which is not typical of the area in which we dredge.

In closing, before the problem becomes even more life threatening and essential to protecting our environment, wildlife and human health protection, I recommend that the state commission, promote, contract and pay small miner suction dredge operators to remove any and all mercury found in our waterways by suction dredging our streams and waterways, before the mercury can get moved further down into the Willamette Basin and converted to methylmercury by the bacteria. We also recommend that the requirement for the 700 –PM permits be eliminated altogether as non-industry related, which would increase the number of dredgers in the waterways each year working to recover and reduce any elemental mercury found to be accumulating and or pooling in our waterways. Thank you.

Literature Reviewed and or Cited:

Ashley, R.P., J.J. Rytuba, R. Rogers, B.B. Kotlyar and D. Lawler, 2002, Preliminary Report on Mercury Geochemistry of Placer Gold Dredge Tailings, Sediments, Bedrock, and Waters in the Clear Creek Restoration Area, Shasta County, California, U.S. Department of the Interior, U.S. Geological Survey, Menlo Park, CA. Open-File Report 02-401

Humphreys, R., 2005, Losses and Recovery During a Suction Dredge Test in the South Fork of the American River. Staff Report, State Water Resources Control Board, Division of Water Quality.

Prussian, A.M., T.V. Royer, and G.W. Minshall. 1999. Impact of Suction Dredging on Water Quality, Benthic Habitat, and Biota in the Fortymile River, Resurrection Creek, and Chatanika River, Alaska. U.S. EPA Report, Region 10, Seattle, WA.

Rytuba, J., C. Janik, and F. Goff. 1996. Transport of Mercury in Sulphur Creek, CA. U.S. Geological Survey, Presentation given at the USGS Workshop on Mercury Cycling in the Environment.
<http://toxics.usgs.gov/pubs/hg/abstracts.html>.

US EPA, 2001. Mercury Recovery from Recreational Gold Miners.
http://www.epa.gov/region09/cross_pr/innovations/merrec.html

WA DOE, 2007, Miners Remove Gold Rush Mercury from Washington

Streams. Washington State Department of Ecology, Hazardous Waste and
Toxics Reduction Program, Yakima, Washington
<http://www.ens-newswire.com/ens/sep2007/2007-09-18-096.asp>
<https://www.montereyfish.com/mercury-and-selenium?f>
<https://www.vitalchoice.com/article/most-fish-rank-as-very-safe-on-new-selenium-based-standard?>

Respectfully,

Linda S Olson
Mining Claim Owner

Here are some of the documented benefits of Suction Gold Dredging:

1. Suction Gold Dredging removes harmful mercury, and keeps rivers clean of trash and debris. Nuts, bolts, nails, and other metal objects are captured by the sluice box and removed from the waterway.
2. Suction Dredging Season is coordinated as to not interfere with fish spawning and hatching times.
3. Suction dredging releases food trapped under the gravel into the waterway to feed small fish and fry.
4. The redistribution of classified gravels creates more spawning area for heavily populated fish spawning grounds. According to the Department of Fish & Game – “Dredging riverbeds frequently improves the habitat for spawning.”

**21. McKenzie
Dukes**

Hello my name is Mckenzie Dukes. I have been mining since I was 13, I'm now 27. I have personally used a five inch dredge in Idaho in the area where there was substantial amounts of mercury leftover from the 19th century miners. And I can personally tell you that the sluice box in the dredge caught all of the mercury dredged out of that creek in the first foot of the sluice box. The sluice box is designed to catch all heavy metals and minerals and remove them out of the materials that are being processed through the dredge. Now with that said, the dredge cleans the gravels from the pollutants and in return actually discharges the clean gravels that are aerated and in a way deposited back into the creek, which allows for better spawning beds for fish, versus the hard packed river gravels that had been packed in by seasonal floods.

During floods you can see obviously the high water levels, the turbidity, the rivers move thousands upon thousands of cubic yards of material and stirs it all up during floods. So essentially if you guys actually wanted to make a real difference, you would put suction dredge miners to work. Put them in the water and actually pay them. We already do it free by removing the mercury with dredges. Earlier you mentioned you didn't know of any method that was used to remove mercury out of the waterways. We have all been talking this entire time about how gold dredges remove the mercury out of the water along with the lead and other heavy minerals. So my thought is leave the miners alone, leave the dredgers alone and start respecting the miners for being stewards of the land, stewards of the creeks and rivers, and actually doing everyone a favor, doing the fish favor and removing those heavy metals from the river ways. That's all I have to say. Thanks.

**22. John Stepnik,
Willamette
Valley Miners,
Oregon**

Hi, my name is John Stepnik. I live in McMinnville, Oregon and I am proudly the president of the Willamette Valley Miners Association in Salem, Oregon as well as I am also as tax paying citizen in the state of Oregon. Mining has been in my family my entire life and beyond through generations in my family and many other fellow miners in this as well as in Portland that are sitting next to you.

My comment is this, as you mentioned in California, was the location of your dredge study. Why was that not in Oregon? As you pointed out, mercury methylates at 70 degrees. It is a very well-known fact in our rivers and streams and creeks, that actually is not a temperature that is obtained. As my friends, family and fellow miners have already pointed out, California pays tax dollars to use a special dredge, much like ours, to remove mercury. If that is the case, why are you removing the one thing that California has proven, obviously proven to you and all of us, removes mercury? It was absolutely appear and prove that dredging is the cure, not the contributing issue. Please, please, please refer to the study already provided to you as pointed out numerous times. The study I'm referring to is the study provided by Joe and Claudia. That clearly shows the removal of 98% of the mercury, which was... which you, once you refer to this being a... when you refer to it, you'll see that it's a proven study. Which by the way is verified by California use of a dredge to accomplish what you're removing from the 7% is of the miners in this room and there, which is also the group that is already happily is happy to help with the removal of the mercury as well as other heavy materials. I hope you have listened to us tonight. It would be a sad place for us and you and everyone involved to be forced into litigation, civil suits, courts, as well as contacts with legislatures. But you should know it is coming and generations of miners will stand behind them. Thank you for your time.

**23. Howard
Connor,
Willamette
Valley Miners,
Oregon**

Hi, my name's Howard Connor live in Salem, Oregon. I'm a member of the Willamette Valley Miners. I've been mining and prospecting for well over 20 years. A lot of this drives me crazy. I approach this from two different directions. One scientific and one recreational, if you will, for the gold mining industry. When I first came to Oregon in the early nineties, Oregon Fish and Game, paid for a backhoe to go down some of our streams and dig holes in the stream bed, so the salmon would have a place to lay their eggs. I guarantee you my dredge does the same thing at far less damage to the stream banks and the in-water environment. That bothered me a little bit at first.

I came from a long time in health care, but before that I was a high school student. I'm now 78 years old, which is amazing because according to what I hear about mercury, I should have been dead a long time ago when I was in high school. You can walk into any drug store and buy a two ounce bottle of liquid mercury, to which you could go out and play with, which we all did to coat our pennies and our dimes and our quarters, and our 50 cent pieces and our dollars and make them all silver and shiny and pretty. Then we had put those coins in our pocket at body temperature where it may have gone to vapor state to some degree. And then we'd eat our Twinkies and our lunch and everything else without washing our hands, of course. So it's really an amazing thing that I'm alive today. I should have had mercury poisoning a long time ago.

I spent my career in health care as the director of biomedical engineering and

also director of safety and disaster in hospitals. One of my jobs was hazardous materials confinement and handling. I can tell you that health care uses a huge amount of liquid metal mercury for all kinds of test purposes and apparatus. At one point I had over 10 pounds of mercury that I had harvested off different pieces of equipment. One of the treatment procedures that was in common practice before balloon angioplasty came along, was to take a long red rubber tube – hollow -- it was tapered, fill it full of metallic mercury, seal it and this was used for esophageal dilation. Now today they use balloons. In that day, they used liquid mercury. I can tell you for a fact, because I recovered a lot of them, that rubber breaks down ingastric acids after awhile and starts to leak mercury into the system. The truth is that metallic mercury has almost no absorption into the human body. You can take a tablespoon and drink it and eventually it'll come out the other end. Very little solubility in the acids in the stomach or the enzymes in the stomach and intestines. The problem we get into with mercury is when it methylizes. Methylation is done by a bacterial operation, generally in an anaerobic movement environment in the stream bed sediments. This methylation is spread when something interrupts the sediments on the bottom of the stream. This could be Mother Nature with a stream run off knocking boulders down the stream channel that you can hear well from the banks. It could be me and my section dredge. Or it could be six teenagers playing in the water. The stirs up the sediment and allows the metalized mercury to go downstream. Point is it's methylation. It might collect in the fish in environment at some point the invertebrates. The point is it's going to be very, very low for humans and we really need to get our facts together instead of feeding of the miners a bunch of nonsense that science doesn't bear out.

My dredge has collected mercury, which makes me very happy. I don't have to buy it that way because I use mercury for amalgamation to recover fine gold. I'm very careful. I use a fume hood when possible. I use a retort. I'm very cautious because the way mercury gets into our bodies, is by vaporization or the methylation thing. You got to eat a ton of fish to get enough mercury from the fish. The mad hatter's prove back in the day that if you inhale mercury vapor, it'll drive you nuts. Now, some of my friends might say, that's my problem. I don't know. We won't ask them. I'd never solicit second opinions.

The thing is our resources in Oregon are wonderful. We all have different loves of nature. You have hiking, swimming, cave exploration, fishing, mining, rowing, whatever it might be, diving, in some cases. There is a lot of work put into the environment. We can tell that up in the Portland area some of the trails have been closed because of overuse, frankly.

What bothers me is that those of us who use the rivers for fishing, for paddling, for swimming, but especially for fishing. If you are someone with money and you love to fish and you come up to your favorite fishing hole to relax from a very, very bad week, and you see me in the water, you are not very happy about it. Because we're competing for the same space.

Fish love me. They say that dredging kills fish. Well, guess what a hook does. I can take pictures of fish swimming around with big smiles on their face, I tell you, for the water coming off the end of my dredge. Because they know I'm

stirring up food. So on the one hand I'm providing reclamation project by cleaning the lead and the mercury out of the stream bottom. I'm also creating a hole for the laying of eggs. I'm also building a mound up for the unequal stream base and I'm also feeding the fish at the same time. I have fished. I enjoy fish. But I'm not going to take it out on a miner because he's competing for the same section of water that I want to go into, and I'm in a hurry and I got a lot of money, and I'm going to find someone that's going to respond to my money and not logic.

This makes a lot of people very angry. It's partly our fault for not getting together with all the people that have a stake in this and supplying a uniform front. I think we've been divided too long. We need to all get together, as Tom said, provide a front to the government, so that we talk about factors that are real. I don't have a lot of money. I'm in my retirement. I have a disability income. I'm on my social security. But you know what? When I go out in the wilderness, when I go out in the stream channels, that's my recreation and I love it and I am a good steward. I pick up the stuff that's there, the trash, I take it home with me. We should all be enraged with some folks that go out and destroy the creeks and our banks. But that's for us to recreate when we go out and use the resources. Thank you very much and I hope this come to fruition that we can make real honest progress. Thank you.

24. Cheryl Greenlee, Oregon

I'm Cheryl Greenlee and I'm new to Oregon. I was only here for two months and now I've been here for, well, I've been here for a year and a half, little over a year and a half. And two months into being here, I became disabled. So my introduction into the Oregon community has been by getting involved in the legislative processes here. I sat in on the last ways and Means Committee for HB 2020 and the last testimony that was given to that committee stated that the technology to implement the plan that they had put in place hadn't even been developed yet.

The thing that I heard today started out with fish and the mercury in fish. What I also heard tonight more than anything else, in addition to what I've heard from loggers and farmers, is that these people are your solution. Not somebody sitting at a desk pushing the pencil and pushing numbers and trying to figure things out on paper. The people in this room are your solution. They presented you with the technology to implement a solution and I think it would be a shame to push them to the point of litigation and that's all I have to say.

25. Various Commenters, Oregon

DEQ's Mercury TMDL is Flawed
Dear Basin Coordinator Matzke,
I am a farmer in the Willamette Valley, and I am writing to express my concerns about the Willamette Mercury TMDL. As I understand it, the TMDL is holding farmers responsible for mercury related to air emissions outside of Oregon, and largely from outside of the United States. Even though farms are not a source of mercury emissions, DEQ is seeking to regulate us simply because mercury gets onto our farms, and onto waters that flow through our lands.

I am concerned because the modeling that supports the development of the TMDL has significant uncertainty associated with it. Many of the correlations DEQ draws are not supported by science or do not have sufficient data backing them up, and the model has to make so many assumptions to draw a line

between methylmercury in fish and the atmospheric deposition of mercury onto farm and forest lands. In many cases, DEQ's own experts admitted that the data was too limited or that many assumptions had to be made to get the data to fit the modeled outcome. Given how significant regulations flowing from the TMDL could be for farming in the Willamette Valley, I am not comfortable with basing agriculture's load allocation on assumptions and limited data sets that have issues that compound across several different models.

We have always been proactive about protecting water quality on our farm. Oregon was one of the first states to enact a nonpoint source pollution program, and farmers have been proactively collaborating with the state and others on water quality improvements ever since. We will continue to engage to improve our water quality. However, I cannot support a TMDL that seeks to regulate a pollutant that farmers have no control over, and which originates from outside of our state, especially when that TMDL is based upon compounded modeling issues and insufficient data.

Sincerely,
Various commenters (

**26. Stephen
Roberts,
Washington
County
Department of
Land Use &
Transportation,
Oregon**

August 30, 2019

Andrea Matzke, Basin Coordinator
Oregon Dept. of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, OR 97232

Dear Ms. Matzke:

Washington County Department of Land Use & Transportation (LUT) received your Request for Public Comments on the Draft Willamette Basin Mercury TMDL. Technical and planning staff and consultants have reviewed this Draft document, noting several concerns with the new requirements and expectations that go beyond the many water quality protections we currently provide. This letter serves as our formal response to the Draft.

We have enjoyed a good working relationship with Oregon DEQ for more than 25 years, and have a fully functioning and implementable Tualatin Basin TMDL Program for the Nonpoint Source Rural Area. With regard to Mercury, we have been implementing a TMDL Mercury program since our approved 2008 Water Quality Management Plan Update. We see no benefit in the new triggers and imposing standards over the current program.

We have identified significant obstacles to ensuring compliance with the Draft standards and new requirements to be imposed on us in meeting the new Mercury load allocations. We are also concerned about how the Draft TMDL may impact the resources and operations of both the County and our constituents, including:

Legal issues

Feasibility issues

Impacts on government resources/ability to implement

Impacts to residents and our customers (business, farmers, others)

Increased Technical Review and Staffing needs
More specifically, our comments are as follows:

We request the Final TMDL correct Washington County's status from a Phase 1 MS4, to the proper DMA as a non-urban Nonpoint Source rural DMA. As a long-term Nonpoint Source Designated Management Agency (DMA), Washington County has been in good standing with Oregon DEQ by meeting and implementing the Tualatin Basin Nonpoint Source TMDL Management Plan for the Rural Area. However, for the urban area, Clean Water Services is the Phase 1 MS4 permittee, and only permittee under the MS4 permit and the only DMA for the urban area. Please correct this in the Appendix E List of DMAs and responsible persons, where the County (No. 103) land use and population, and MS4 status as stated should be shifted to Clean Water Services.

To avoid non-compliance, we request clarification in the Final TMDL re: specifically how to demonstrate compliance, and we support the existing TMDL program allowing compliance to mean implementing the approved Washington County Five-Year TMDL Management Plan.

The County is concerned the expectations under this new Mercury TMDL as written can put us into a non-compliance status, which is unacceptable. The County acknowledges TMDLs are different from Municipal Permit Programs. However, TMDL Management Plans and implementation measures are the normal mechanism for compliance. The County is very concerned that the Draft Mercury TMDL does not say how reduction would be demonstrated, yet requires us "to meet new load reductions."¹ This sets us up for non-compliance (fines, penalties), since we cannot demonstrate "we" are meeting load reductions. We cannot distinguish our activities and assign numerical reductions from the totality of those in our category expected to meet load reductions.

Although traditional point sources, with known controllable sources, give support to wasteload allocations, the variable and imprecise nature of mercury loading and mercury movement do not give the same support to load allocations in the form of nonpoint sources. In particular, our lack of control over sources, and in point-of-fact air emissions permitted by DEQ2 (as detailed in your Appendix G), and your identification of global air deposition, does not give us the ability to demonstrate numerical reductions to mercury based on our actions. This also sets us up for non-compliance, since the document describes compliance as a "75% reduction g total mercury/day" for Non-Permitted Urban Stormwater.³

Washington County's Existing TMDL Program is Sufficient to Meet the Intent of the Clean Water Act. We request the removal of "Non-Permitted Urban" designations as an unreasonable category for a truly rural jurisdiction.

There is no legal category of "Non-Permitted Urban Stormwater." The Clean Water Act, by definition, addresses urban stormwater by specifically defining urban area (UA) and requiring stormwater permits for UAs. The Phase II Final Rule required the NPDES permitting authority (i.e., DEQ) to develop a set of designation criteria to all small MS4s located outside of a UA serving a jurisdiction with a population of at least 10,000 and a population density of at least 1,000 people/square mile.⁴ Washington County's rural population density is approximately 44 people/square mile, or 95% short of an UA. This fact demonstrates the County is not and

¹ Section 13.3.1; Draft (Revised Willamette Basin Mercury) TMDL for Public Comment; July 3, 2019, p. 100.

2 Appendix G, Oregon (DEQ) permitted mercury air emissions in the Willamette Basin; Draft (Revised Willamette Basin Mercury) TMDL for Public Comment; July 3, 2019.

3 Table 1-1; Draft (Revised Willamette Basin Mercury) TMDL for Public Comment; July 3, 2019.

4 Stormwater Phase II Final Rule; Who's Covered? Designation and Waivers of Regulated Small MS4s. cannot be a defined UA, nor a small MS4, nor the non-existent "Non-Permitted Urban Stormwater" discharger.

The TMDL is not an MS4 program, and not a permit program, although an NPDES permit can include implementation activities of a TMDL program. Nonetheless, Washington County has TMDL responsibility only in the rural area, since Clean Water Services (a Service District) is the NPDES sole permittee for the entire urban area of the County.

De Minimis Impact: 99.94% of mercury loading is from sources other than Washington County's rural area.

"The analyses that are the foundation for the draft TMDL estimate that mercury loads from all combined, non-permitted urban area stormwater discharges is approximately one percent of the overall load in the [entire] Willamette Basin. The TMDL requires a 75 percent reduction of mercury loads across this [one percent] sector."⁵ This statement more than any other in the Draft Mercury TMDL demonstrates the de minimis impact such sources potentially contribute. To demonstrate the de minimis potential impact: The Tualatin Basin is one of 15 identified segments of the Willamette River. Washington County is a rural DMA within the Tualatin Basin. In the entire Willamette Basin, i.e., all 15 rivers, watersheds, lakes or reservoirs, DEQ estimates 1% loading for mercury in "non-permitted urban area stormwater." Extrapolating, even assuming the disputed designation of a non-permitted urban area, this would mean a potential .06% impact. This means 99.94 % is from other sources than Washington County's rural area.

Knowing 99.94% of mercury loading is from other sources, we believe it is unreasonable to expect Washington County to create an additional review process, hire additional staff, create a new Mercury monitoring program, enforcement mechanisms, etc. for an imperceptible loading.

The DEQ standard for rural counties in the Draft Mercury TMDL is higher (more prescriptive, stricter) than the EPA standard for urban areas. We request removal of the specific triggers and thresholds in Minimum Control Measures #5 and #6 that are not part of EPA's guidance, are beyond the 1200-C program, and are not necessary in the rural setting.

Municipal discharges (i.e., permits for discharges from MS4s) require controls to reduce the discharge of pollutants to the maximum extent practicable (MEP). This MEP standard is used for large and medium MS4s.⁶ For small (Phase II) municipal dischargers, the MEP standard is also used, and loosely defined by EPA Guidance as satisfying the Six Minimum Control Measures.⁷ The Draft Mercury TMDL DEQ document imposes a higher (more restrictive, more prescriptive) standard than the MEP standard used for urban stormwater, and a higher standard than the EPA Guidance, even though we are less than Phase II dischargers (i.e., less impact).

Prescriptive triggers added by DEQ in Control Measures 8 #5 and #6 go beyond reasonable management measures applicable to urban DMAs. In this case, they are applied to the "non-permitted urban DMAs with a population of 5,000 or greater."⁹ Thus, these standards go:

5 Section 12.3.1.11.2; Draft (Revised Willamette Basin Mercury) TMDL for Public Comment; July 3, 2019, p. 97.

6 Clean Water Act, Section 402(p): NPDES, Municipal and Industrial Stormwater Discharges.

7 Stormwater Phase II Final Rule; Small MS4 Stormwater Program Overview; Fact Sheet revised Dec. 2005.

8 Table 13-10; Draft (Revised Willamette Basin Mercury) TMDL for Public Comment; July 3, 2019.

9 Id. beyond EPA guidance advised for larger urban areas (above 10,000), and beyond EPA guidance to not apply (i.e. allow a waiver) for population densities below 1,000 people/sq. mile. Again, the rural population density of Washington County is approximately 44 people/sq. mile.

Washington County has an existing robust TMDL program. Adding extensive Erosion & Sediment Control Plans (review, inspection, enforcement) based on arbitrary thresholds of ½ acre with no analysis as to benefit for Mercury deposition, and for Impervious Area triggers of ¼ acre in the rural area is beyond the scope of the current program and is not reasonable.

We are also concerned regarding another of the six Minimum Management Measures, and the application of an Illicit Discharge & Detection Elimination (IDDE) program regarding mercury loading for the rural area. An IDDE program and EPA guidance targets industrial, commercial, residential urban, and municipal activities such as landfills, fleet storage, etc. Our biggest concern is the cost of an outfall field survey over 712 square miles of rural hills – which simply does not make sense. While this is required (as one of the six Minimum Management Measures) in Urban Phase 2 jurisdictions, they are still cities, and applicable where the MS4 serves an urban population. Perhaps the document could address what a rural area Nonpoint Source IDDE program would entail.

If DEQ decides to maintain the ½ acre threshold of requiring full Erosion & Sediment Control Plans (ESCP) in the Final Mercury TMDL, then DEQ should consider amending the 1200-C program (which delegates ESCP permitting to DEQ where land disturbing threshold is one acre or more) to ½ acre or more, to avoid the burden this will cause on small cities and rural counties within the Willamette Basin.

Feasibility Issues: The Draft document needs to specifically state how Washington County would demonstrate compliance.

Mercury loading is based on a wide variety of diffuse sources, conditions, variable soils and weather. According to the Oregon Association of Clean Water Agencies (ACWA) and TAC members, the Draft Mercury TMDL includes invalid bases for methodology, issues with using sediments as surrogates, et al. For these reasons, Washington County is concerned as to how specifically we would demonstrate compliance.

The Draft TMDL requires a 75 percent reduction of mercury loads across the sector of all “non-permitted urban DMAs,” which is a 1 percent estimated total load. Although the County disputes the designation of “non-permitted urban,” this de minimis insignificant impact would be impossible to demonstrate specific to the County. We cannot get into a situation where compliance cannot be demonstrated.

The increased level of implementation (financial, political, technical) as laid out in the Draft Mercury TMDL creates an unacceptable cost/benefit imbalance.

This is especially true as a rural area management DMA (Washington County),

with a de minimis effect on mercury. The necessity of creating new staff positions, reporting mechanisms, field review, and enforcement is a financial impact on the County that is not going to change mercury levels.

Direct Impacts to Community Residents, Farmers:

- Our residents expect clarity, predictability and reasonableness. We cannot justify to permit applicants that the increased burden is due to a potential 1/15th of 1% of potential mercury loading. Applicants could be subject to hiring engineers, paying for design plans, increased structural facilities, and increased County fees and other technical costs – again, in the rural area where vegetation and infiltration generally occurs.

8) Technical Concerns: The modeling the Draft DEQ Mercury TMDL document is based on lacks validity.

- It is our understanding the DEQ Mercury TMDL modeling provided by TetraTech was not peer reviewed and has not been validated. Due to the impact the new TMDL has on County resources, the community's resources and potential negative economic impact, any new requirements should be based on solid grounds.

- Washington County supports the comments made by Clean Water Services regarding the technical basis of the document, without repeating them herein.

We believe it is important that these concerns be fully considered and addressed before DEQ issues its Final Mercury TMDL. In particular, as shown by our comments, we request the additional standards above EPA guidance in the Six Minimum Control Measures (triggers added by DEQ in #5 and #6) be removed. We also request the proper designation as a Rural Area DMA consistent with our current and long-term TMDL program, with clarification in the Final Mercury TMDL to recognize Rural Areas as such instead of designating all areas at urban levels.

27. Tom Pepiot,
President of
the Bohemia
Mine Owners
Association,
Oregon



**Bohemia Mine
Owners Association, Inc.
P. O. Box 421
Cottage Grove, OR 97424**

8/29/2019

Hello,

My name is Tom Pepiot, I am a Federal Mining Claim owner in the Bohemia Mining District and the President of the Bohemia Mine Owners Association. First off, I want to thank you for hearing my comments and hope this agency takes all the comments from those directly affected into dire consideration with your decision making. I want to know why mining representatives from our district or any others was not included to be on this advisory committee, I see Federal and State Agencies, Land owners, Agriculture producers, Fisheries, Cities and Environmental groups were all on the membership list no Mining Associations, no Mining District Representatives. We should have had seat at the table especially when it involves the prohibition of suction dredging in the Bohemia Mining District, this will affect approx. 300-400 federal mining claims and thousands of acres within the District.

The Bohemia Mine Owners Association is an organization of nearly 300 members made up of claim owners, (hard rock and placer claims) and those who like to recreate, and enjoy the outdoors. The Bohemia Mine Owners is the oldest civic organization in Cottage Grove, we promote and encourage mining, support the 1872 mining law, preserve mining heritage and work with local federal, state and county agencies in many various projects in the Bohemia Mining District, we operate the Bohemia Mine Patrol that operates like a neighborhood watch with a radio communication that works with miners to follow rules of BMOA and follow all state and federal laws and regulations and detour vandals and trash dumping, we adopted the Champion Creek Road, and Mineral Campground, we teach mining history, geology and gold panning at Outdoor Schools, Boy scout rendezvous, Bohemia Mining Days, 4th of July in Creswell, Western Oregon Expo, teaching 2000+ children and adults each year, we also provide a scholarships to Cottage Grove High School every year. Each year the members of the BMOA collects donations of gold from local miners who most use a suction dredge to extract gold from the river bottoms where its plentiful, if this prohibition takes place these events mentioned above will cease to exist and these children will no longer have the experience to pan for gold, this is going to be a terrible lost to a community that has had mining as part of its heritage.

I have been mining 31 years and have seen little to No Mercury in my suction dredge while mining on Sharps and Brice Creeks, if there was large amount in the BMD, mercury would catch in upper sections of the suction dredge where 98% of the gold is collected, the lower sections that have been build to collect flour gold would have some trace of mercury, myself and many others experience these type of on site evaluations frequently and they all come to the same conclusion NO MERCURY. We don't use mercury we collect it if it's there, if we find it, we dispose of it properly.

I have read though your literature and it seems that these studies were done without claim owners knowledge, I have been told by DEQ representative that none of the studies you referenced were initiated by DEQ and DEQ did not participate in them in any way, instead as with most issues DEQ evaluates, DEQ collected all the available studies that you could find which had been published in peer-reviewed literature and used the information in the them as the best available information from which to make decisions. The question is, COULD they be Flawed/Bias in one way or another, MAYBE. We should have been notified when and where studies were to be taken and was not therefor it is considered mineral trespass, there was 39 sediment samples collected from active channels of major tributaries throughout the watershed how many was on active mining claims, we need to know the site specific Long/Lat for each samples.

The dredging that occurs in the Bohemia District is at best occasional, many claim owners or suction dredgers work and mine on the weekends, or when they have spare time, the 700pm permit that many have listed Bohemia District as a location are not in local area and may not even use the permit in the District creating a false claim that there are 28 permits holders that only dredge in the Bohemia District in fact only a very small handful even do dredge in the District and move very little material which DEQ has records of. We as claim owners have the responsibility to, profitably produce from and maintain our federal mining claims to keep it active and the only profitable way is to remove the gold from the creek bottom with a suction dredge, using a sluice box and a pan is not practical method for production.

If the mercury is such a problem then we need to find a way to remove it from the waterbody and suction dredging accomplishes this by removing 98%+ of the mercury, in the mean time DEQ needs to allow us to dredge and remove any mercury if found and require the proper disposal of it require suction dredgers to report mercury hotspots and work with miners to remove mercury with onshore processing. Our dredges only operate a short period of time and we work in slow moving waters normally the turbidity plumes fall out of water columns in a short distance downstream while in Winter and spring high waters pose a high potential to transport material downstream into the Reservoir, which storm events are shown to be when mercury levels in the lake increase through years of floods as shown in your studies, not every year.

The Bohemia Mining District has a vast history the speculation that is used in reports and studies is completely unprofessional such as speculating that accidental spills of mercury may also have occurred during transport on the steep and primitive roads into the district and during use at the mill sites. Also its reported that the extent of the soil contamination throughout the mining district has never been determined, but applying an average mercury emission factor to precious metal production what is not mentioned that a large percentage of ore was transported to Washington to be processed, that's where

historic terms that Cottage Grove streets was paved in gold, because ore was transported by wagon down to valley where it was shipped to Washington.

We know that the waters are different from California to Oregon in the Bohemia Mining District waters are pretty cold 56 degrees on Sharps Creek taken August 14 2019, and we know in California water temperatures are warm. There are many issues using California testing compared to Oregon each river system has its unique feature, in California Hydraulic mining operations used mercury to recover gold in sluice boxes extremely heavy flows of sediment from hillsides flowed down through sluice boxes into the lower river systems creating havoc throughout the water column this is most likely the main source of mercury in those river systems in California. In the Bohemia Mining District reports are said that Mercury was used in the hard rock operation at the stamp mills, DEQ used historic reports from historians and such to get certain information to make claims of mercury loss attributed to these operations, a lot of the historical information has been miss leading due to stories and hearsay from miners throughout time. Stamp mills did use mercury on copper plates we all know this, most operations had some type settling pond of sorts to have enough water to run the mill so if losses of mercury could be accounted it would be there in the water storage (Settling Pond), the elevation of these operations water was scarce and reuse of water was needed and was a must.

The Champion Mine has been a site of a Superfund cleanup had been done by the USFS, and on 1/18/2018 a report was received and conducted by TestAmerica Laboratories, Inc. TestAmerica Seattle 5755 8th Street East Tacoma, WA 98424, TestAmerica Job ID: 580-74481-1 TestAmerica Sample Delivery Group: Brice Creek Client Project/Site: Champion Mine. In these reports it shows the conditions of samples and methods used. Mercury was not Detected at the reporting limit (or MDL or EDL if shown) Estimated Detection Limit (Dioxin), MDL (Method Detection Limit). These tests are from Champion Mill site, Champion Creek and Brice Creek so this is showing the site cleanup is improving conditions even when suction dredges are used in creeks. We believe that new test needs to be conducted before prohibiting suction dredging can occur.

In conclusion, we know storm events move material downstream which may or not contain mercury, no matter if we continue to dredge or we are prohibited to dredge the mercury levels are going to increase and decrease due to mother nature, we are not the problem we are the solution. Instead of prohibiting suction dredging find a way to keep us in the water, in DEQ meeting on July 15 2019 it was stated that legacy mining contributes 1% of mercury contamination to Willamette Basin BMD contributes 7% of that 1%, DEQ TMDL limit for mercury .04 BMD is .0007 a lot lower than your study. There is a lot of possibilities for contamination in Dorena reservoir Bohemia Lumber Mill was at site of Sharps Creek and Row River, another Lumber Mill site in Disston and its location was near Brice Creek and Layng Creek, Electric Plant at Lund Park. If we find these areas with mercury hotspots miners can be the cheapest method for the state to consider. Some of the techniques include dredging and pumping of contaminated soils, chemical treatments with other compounds to make it biologically unavailable, physical barriers to contain it so it no longer spreads, using microbes to demethylate the methylmercury to a less toxic form, using plants to remove or immobilize it, and manipulating water quality parameters such as oxygen or pH to ensure that methylmercury

production will not occur. Here is an opportunity for ODEQ and the Miners in the state of Oregon to work together to possibly effectively remove mercury from upper reaches of the Willamette water sheds, with engineers, scientist, and miners working together for removal is the Best Manageable Practice for removal not prohibition. Give miners an incentive by reducing permit cost, recognition in some way or another. The Bohemia Mine Owners Association have been working with local agencies for many years with great success, different mining districts and associations have not had the success that we have had and we wish to be a changing factor in that issue here in the Bohemia Mining District so its time for us to sit down and come up with a solution that keeps the suction dredges in the creeks at the same time assist ODEQ with there goals of lowering mercury levels in the Willamette Basin.

-Removal of mercury from surface waters using coagulation

<https://mavensnotebook.com/2016/08/25/removal-of-mercury-from-surface-waters-using-coagulation/>

-Effective removal of mercury from aqueous streams via electrochemical alloy formation on platinum

<https://www.nature.com/articles/s41467-018-07300-z>

Thank you

Tom Pepiot
President of the Bohemia Mine Owners Association
PO Box 421
Cottage Grove, Oregon 97424

Oregon Samples

(Silt Stop and Flocc Log Applications)

Sample Location Description APS Application Results and Special Instructions
Analysis Date 6-4-09 JCE Sample Type Flocc log Type Reaction Time /
Resulting levels

Cascade Earth Sciences **Water Sample** 703d#3 + 730b 60-70 sec / 18.3 NTU

3511 Pacific Blvd. SW pHi - 6.5 Fe : 1.07 ppm

Albany, OR 97321 NTUi - 50.2 Zn : 0.04 ppm

Mn : 1.7 ppm

Tim Otis, PE

541.926.7737

Tim.Otis@cascade-earth.com

Note: Mixing / reaction times will be very important when using the Flocc Logs listed above. The mixing must be continuous contact with both logs for as long as possible to obtain the best results. Note that this soil / polymer reaction will produce a fine particulate that will require "trapping or capture" by filtering through silt fence or jute fabric / particle curtains after the mixing reaction has been completed. The contaminants in this water will be contained within the particulate. The dosage rate should be 30-40 GPM per each Flocc Log placed in a series or in a row.

Stabilization of the soil can be done with the 705 Silt Stop powder. Dry application over jute fabric or in conjunction with seed applications

applied to the soil before placement of matting, straw or other cover. Hydroseeding applications will require the addition of 20-25 pounds per acre coverage using 3000 gallons of mix /acre. The APS 705 powder may replace other tackifiers or polymers rather than as an addition.

After reviewing the plans sent with the sample we suggest applying jute and Silt Stop on all open ground between and around the 'Floc-Log Boxes'. The Polymer Charged Jute will act as a binder/tackifier and aid in particulate capture. If there are any questions or concerns feel free to contact us via phone or email. The Polymer Enhanced BMP Guide (Application Guide) can be found at www.SiltStop.com on the lower right hand corner.

Applied Polymer Systems, Inc.
519 Industrial Drive
Woodstock, GA 30189
678-494-5998

28. Jeff Hays

Flood under the Old Route 49 bridge crossing over the South Yuba River in Nevada City, California

https://commons.wikimedia.org/wiki/File:Flood_under_the_Old_Route_49_bridge_crossing_over_the_South_Yuba_River_in_Nevada_City,_California.jpg

Kelly M. Grow/ California Department of Water Resources [Public domain]

Regarding your ill conceived proposal regarding suction dredge use, This picture should tell you how absurd that concern is when dredges remove mercury, are classed as minimum impact under the Corp's 404 criteria.

Do you even have any idea what a full spring flood does? The entire riverbed is picked up and moved, scoured to bedrock, and every bit of mercury moves with it.

I used to come out there to dredge in my younger days, spent a lot of time and money there. Have you even thought of the economic impact to the rural economy?

I now live in the East and every state out here has a Mercury in Fish advisory. We have no legacy mining mercury. It occurs naturally. In my state Women and Children are advised in many lakes to eat NOTHING they are so contaminated with Methyl Mercury

LOOK AT THIS PICTURE and ask yourself can you actually say suction gold dredging is any kind of an issue ?

Mercury and the Bohemia Mining District

29. Richard Stocking, Oregon

Good Day....

I am a placer miner in the Bohemia Mining District, own 3 claims on Sharps Creek and took the opportunity to attend the DEQ "Town Hall" meeting several weeks ago in Eugene, Oregon with a conference call link to the DEQ office in Portland, Oregon. I must say that the information compiled and presented by the researchers for DEQ was flawed and not based on facts from the Bohemia Mining District. The examples presented during the conference call, were based on studies taken in Northern California, the mercury accumulation amounts were compiled from Northern California streams, mercury level readings were taken from Northern California streams and the temperature of the stream waters also taken from Northern California streams. [A side note: Water temperatures above Dorena Lake are nowhere near warm enough to release mercury from where it is being held.]

This information and DATA is NOT representative of the streams in the Bohemia Mining District. None of the Miners in the Bohemia District were advised in writing 30 days prior to any permission being granted or allowing samples to be taken from their claims to substantiate your results and data. No dates, times or places were available as to when this "supposed" data was collected in the Bohemia Mining District or if it was even collected from the District.

Therefore, HOW can you make any rulings on mercury "poisoning" based on data and results gathered in Northern California? Another query.....how can naturally occurring mercury be blamed on the miners in the Bohemia Mining District for high levels when Mother Nature rules the winter water levels and the miners are NOT IN THE WATERS MINING. With all the forest fires in the past several years in our area, mercury in small quantities is being deposited all over this state from the air around all of us. How do you control that? By removing miners from the District?

Keeping miners out of the waters above Dorena Lake is not the answer. It is a proven and documented fact that we remove mercury, lead and other pollutants when and if they are found when we are mining.....all across this State of Oregon.

I sincerely hope that those that make the Mining policy decisions for DEQ will reexamine their data gathering processes and do the right thing for Mining in the Bohemia Mining District. Booting us out of our claims is NOT the answer. We are VERY GOOD stewards of the aquatic environment.

Thank You in advance for reading not only my concerns but the concerns of miners all across this State of Oregon.
Please take a trip back through your data and reexamine it before you do more harm to Oregon Miners than good.

Sincerely.....
Richard Stocking
681 54th street
Springfield, Oregon 97478
A Placer Miner in the Bohemia Mining District

August 29, 2019

**30. Michael
Karnosh,
The
Confederate
d Tribes of
the Grand
Ronde
Community
of Oregon**

Oregon Department of Environmental Quality ATTN: Andrea Matzke, Basin
Coordinator
700 NE Multnomah Street, Suite 600
Portland, Oregon 97232

1-800-422-0232
9615 Grand Ronde Road Grand Ronde, OR 97347

Via email to
WillametteMercuryTMDL@deq.state.or.us

RE: Tribal comments on 2019 Draft Willamette Basin Mercury Total
Maximum Daily Load and Water Quality Management Plan (TMDL/WQMP)

Dear Ms. Matzke:

On behalf of the Confederated Tribes of the Grand Ronde Community of Oregon ("Grand Ronde" or "Tribe"), thank you for the opportunity to comment on the Draft Willamette Basin Mercury TMDL/WQMP. Grand Ronde is a sovereign Tribal nation made up of more than 30 tribes and bands with homelands in western Oregon, southwest Washington, and northern California. These antecedent

tribes and bands signed seven ratified treaties with the U.S., ceding their homelands in exchange for certain rights and benefits, before being forcibly relocated to the Grand Ronde Indian Reservation.

Grand Ronde's ratified treaties include the Willamette Valley Treaty of 1855, the ceded lands of which include the entire Willamette Basin, from the crest of the Cascades to the crest of the Coast Range down the length of the Willamette River and all its tributaries.

The lands and waters of the Willamette Basin have been the Tribe's home since time immemorial. The fish, wildlife, native plants, and water among others, are all important cultural resources of the Tribe that continue to be vital to place-based and species-based traditions and lifeways. Contaminants such as mercury and methylmercury damage these resources and introduce unacceptable risks to Tribal members, making it impossible for them to practice traditional or modern Tribal culture without being exposed to high risks of cancer, neurological disorders, and other serious health issues. Our Tribal Members fish for salmon and lamprey in the Willamette. They also gather plant foods and other materials for their cultural use. When our people are fishing they at times are swimming, have full body immersion and are exposed to the airborne vapor inhalation of water at Willamette Falls for extended periods of time. These exposures may also include incidental ingestion of river water. Our people also gather edible roots such as wapato from wetland areas at Sauvie Island and other sites in the basin. We maintain a long term goal of restoring these traditional foods as a greater part of our traditional diet and therefore eating both fish and plants that grow in Willamette waters must be safe at high levels of consumption.

Tribal people were the original stewards of the land and water of the Willamette Basin, living in balance for at least 14,000 years. Today, the Tribe looks to its government partners such as DEQ to help fulfill the responsibilities of stewardship. Grand Ronde supports a TMDL/WQMP that will identify and monitor mercury sources, implement and adaptively manage reduction strategies, and make land and water managers accountable for their actions that influence the availability of mercury and methylmercury.

Treaties

Rogue River 1853 & 1854 - Umpqua-Cow Creek 1853 ;., Chasta 1854 - Umpqua & Kalapuya 1854 Willamette Valley 1855 - Molalla 1855

Given that almost all of the mercury in the Willamette Basin comes from nonpoint sources (per Table 6- 7 of the TMDL), it is appropriate that the WQMP pays significant attention to nonpoint sources without ignoring point sources. Even though a large portion of the mercury found in Oregon waters originally

comes to our region via atmospheric deposition from elsewhere, land and water managers in Oregon have the ability and the responsibility to take steps to measurably reduce the amount of mercury that is ultimately available to humans because of their management. A safely swimmable (at all times for all people) and safely fishable (at all consumption levels for all legally-taken species) Willamette Basin should be the long-term goal everyone is focused on.

The transport of mercury to our waters largely occurs due to the movement of sediment off the landscape. Therefore specific and required sediment reduction management must be required of both agricultural and forestry land management sectors to make significant reductions over time. If sedimentation reduction best management practices rely on voluntary adoption by these sectors with little monitoring, as has been past practice, we are unlikely to see significant change.

To make measurable advances in mercury reduction there must be time specific schedules for implementation of sedimentation reduction practices; we believe the lack of such specific schedules is what has limited the effectiveness of previous TMDL efforts. Grand Ronde supports the requirements of the WQMP on designated management agencies (DMAs) and responsible persons, as identified in Sections 13 and 14 and in Appendix E, including the Five Year Willamette TMDL Review to occur in 2023 and annual reporting. Additional required actions must be implemented if there is not significant best management practice adoption. Such monitoring, evaluation, and adaptation requirements will be necessary if the Willamette is to see a decrease in levels of mercury and methylmercury over time.

Additionally, it will be important to have public review and commenting on these reports, particularly the Five Year Willamette TMDL Review, so that the appropriate DMAs and responsible persons can be accountable for their implementation of best management practices. Public review and commenting can also have the positive effect of eliciting creative solutions from multiple perspectives.

Once again, thank you for this opportunity, and for your work in making sure Tribal viewpoints are considered in this process. We look forward to working with DEQ on this and other critically important efforts over Grand Ronde's homelands. The Tribe appreciates DEQ as a vital partner in restoring the resources and habitats upon which our ongoing cultural practices and connections to home rely.

(Many thanks),
Chris Mercier
Tribal Council Vice-Chair

Cc: Tribal Council
Stacia Hernandez, Chief of Staff David Fullerton, General Manager Tribal
Attorney's Office

Suction dredging

31. Jamie

This is just more overreach from Oregon.

Boat motors pollute more waterways in one day than a 4" dredge could in 10 years.

Mining is a federal right. How we mine is not supposed to be up to a state. When we dredge sharp creek we pull the lead out of the creek so it helps the environment not hurt it. I have got thousands of dollars invested in my dredge and even more for my claim is the state going to reimburse me for it? Maybe the state should actually work with miners to find solution instead of taking from them all the time. Miners keep the areas clean for all to use. Might keep that in mind

August 30, 2019

**32. Charles R.
Knoll, Linn
County
Road
Department,
Oregon**

Andrea Matzke, Basin Coordinator
Oregon Department of Environmental Quality 700 NE Multnomah Street, Suite
600
Portland, Oregon 97232

Re: Willamette Basin Total Mercury Designated Load (TMDL) regulations
proposed by the Oregon Department of Environmental Quality (DEQ).
Comment and Request to Eliminate or Revise

Submitted via electronic mail to: WillametteMercuryTMDL@deq.state.or.us

Dear Andrea,

The Linn County Road Department submits this letter in concern of the impact to Linn County as well as the cities, community and economy that will be impacted by the proposed changes to the Willamette Basin Total Mercury Designated Load (TMDL) regulations proposed by the Oregon Department of Environmental Quality (DEQ). This letter is also submitted in concern that the proposed DEQ program may in fact result in an increase in Mercury levels and not a more preferable decrease in mercury levels in the Willamette River. This is due to the failure of the TMDL program to properly identify and address the sources of Mercury in the Willamette Basin and model its movement.

Introduction

I have prepared this letter after reviewing the proposed Willamette Basin Total Mercury Designated Load (TMDL) regulations. I am a licensed Environmental Engineer with over 40 years of experience which includes over 20 years in corporate environmental programs associated with chemical and metals manufacturing. I was also previously employed by the DEQ in its permit compliance programs. I also have considerable experience working with local agencies.

I am proud to say that I have been involved in the development of a number of environmental programs that resulted in the improvement of the environmental quality in which we live. However, this rule as proposed will not provide any improvement to the environment. In fact, this rule, as proposed may result in the opposite resulting in an increase of mercury levels in the Willamette River. The proposed new Willamette Basin TMDL regulations identified by DEQ in the updated Water Quality Implementation Plan (WQIP) have implications for both urban and rural,

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Proposed Willamette Basin Total Mercury Designated Load (TMDL) regulations
Linn County Comments and Request to Eliminate or Revise

large and small municipalities, in Linn County as well as the entire Willamette Valley that extends from Lane County to the Columbia River. In review of the TMDL Draft plan prepared by ODEQ, it is obvious that Linn County or any other Local Agency will not have the resources and data available to identify "non-point source" mercury. This will prevent any effort from being able to achieve the reduction benchmarks with the ultimate goal of reducing the level of mercury in the Willamette River.

The most disappointing fact about DEQ's proposed TMDL is that the plan of reducing suspended solids loading into the Willamette River Basin to reduce Mercury levels will only increase the level of mercury. In other words, ODEQ is requiring the Local Agencies to complete work which will ultimately result in making the Mercury Levels in the Willamette River higher and not lower. This grave mistake is the result of the DEQ not properly and responsibly analyzing the data that is available as described and covered in this letter.

The mercury reduction requirements established in the TMDL primarily target non-point source pollution, which the DEQ asserts is present without any actual sampling and measurement, originates from the atmosphere and settles in the soil. Non-point source pollutants are extremely difficult to identify or measure accurately and are grossly over-estimated by the DEQ's WQIP to make up about 96% of mercury pollution in our waterways. How can a plan be developed that is based on an estimate of approximately 96% of the source that cannot be measured? The answer is that it cannot. This is especially true when atmospheric deposition is not the source of Mercury in the Willamette River. The DEQ only needs to look at and use the data that they have and collect additional valid data to realize this.

The DEQ Mercury Reduction Program as Proposed by ODEQ will result in an increase of Mercury Levels in the Willamette River

In development of the proposed rules to reduce mercury levels in the Willamette River, the Oregon Department of Environmental Quality has failed to make any requirement to reduce the actual measurable and known sources of mercury. This includes the contamination left behind by historic gold mines that used mercury to refine and process gold, the contamination resulting from actual mercury mines, mercury associated with known geological sources of mercury, and mercury associated with industrial sources and even sources associated with recycling of Mercury waste products. Some of these sources are identified and mentioned by ODEQ in their reports but there is not any mention of how to better manage and control and/or remove these sources. The question is this - Why is the DEQ not proposing to manage and control these sources? This question needs to be answered by the DEQ.

The highest contamination is found in the headwaters of the Willamette River where most of these mining activities have occurred. As previously reported to the DEQ in correspondence from on October 28, 2015 the following concentrations were measured in the Willamette River by the ODEQ in the Fall of 2002.

Location	Dissolved Hg in Water (ng/l)	Total Hg in Water (ng/l)	Hg in Sediments Mg/Kg dry
Coast Fork of the Willamette R above Cottage Grove	2.22	3.99	0.451
Willamette River at Eugene	0.380	0.547	<0.02
Willamette River at Corvallis	0.360	0.390	<0.02

The sampling results obtained from the ODEQ provides limited if any monitoring results for other rivers that are tributaries of the Willamette Valley. As an example, for Linn County which is primarily a rural agricultural country, only results for the Santiam River near the City of Jefferson were provided by the ODEQ for 2002. As provided below, the concentration in the Santiam River was much lower than the Willamette River.

Location	Dissolved Hg in Water (ng/l)	Total Hg in Water (ng/l)
Santiam River at Jefferson	0.22	0.240

Data Not Reported by ODEQ
 Calapooia River Various Locations
 South Santiam River Data Not Reported by ODEQ

Therefore, based on what is provided, it is expected that sediments and waters from rivers in Linn County flowing into the Willamette River would actually mix with and dilute and reduce the concentration of Mercury in the Willamette River. If you take this away the mercury levels in the Willamette River will increase or at best remain the same.

Actual Hg analytical data has been very difficult if not impossible to obtain from the DEQ. Requests for actual data have been made without any response. The most recent "Revised Willamette Basin Mercury TMDL Draft for Public Comment" did provide some data of Mercury in Suspended Solids for the Mainstream Willamette and some of its tributaries in a tabulated graphical form. This has been extrapolated and summarized in the following table so as to present and provide an understanding of mercury transport within the Willamette Basin and also demonstrate what actual limited data there is.

August 30, 2019 Proposed Willamette Basin Total Mercury Designated Load (TMDL) regulations Linn County Comments and Request to Eliminate or Revise

Summary of Mercury Levels in Suspended Solids Located in the Willamette River and Its Main Tributaries

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whatsoever for three large sub basins and only limited data (4 or less samples each) for all listed sub-basins.

How can any program be properly set up for reduction in mercury levels be based on limited and in many places no data? The answer is that it cannot.

Linn County Road Department has completed Hazardous Materials Corridor Assessments for a number of bridge and road improvement projects during the past few years. For a number of these projects, soil samples were collected for determination of Mercury. In each case, the results have indicated non-detectable levels of Mercury in the soil. If atmospheric deposition of Mercury is truly occurring, then the soils would indicate the presence of Mercury.

A review of ODEQ data does not indicate any collection and measurement of soil samples for mercury. If I am wrong and there is soil and vegetation data available then please let me know and provide me the data. Therefore, without any data, the hypothesis by the ODEQ that the larger source of mercury is coming from the air and being deposited in the soil and vegetation is false and unproven. In fact, the source of mercury which in the past has been claimed by ODEQ to be from overseas can be proven that it would actually drop out by atmospheric deposition well before it reached Oregon.

Since the soils do not indicate the presence of mercury, then mercury is not present, and the DEQ program based on controlling mercury originating from atmospheric deposition is incorrect. The sad thing is that DEQs proposed TMDL program is based on the false premise that about 90% of the source of mercury is coming from the atmosphere.

Therefore DEQ's program to reduce mercury levels in the Willamette Basin will fail, even after local agencies will have wasted years and decades of time and expense if this proposed TMDL Plan for Mercury is adopted.

It must also be recognized that if suspended solids that do not contain mercury are reduced and controlled in the Willamette Valley as proposed by the DEQ. then this will result in an increase in mercury levels in the Willamette River since these clean suspended solids previously diluted the mercury contaminated solids that were originated in the headwaters of the Willamette.

DEQ needs to provide a program to reduce mercury contamination at its source It is a known fact that there were and are mercury and gold mines in the Cascades. Mercury is and has been used to purify and process gold ore. If these sites are not controlled then residues of mercury from these sites will continue to be transported into tributaries and basins that flow into the Willamette River. After these mining activities were stopped, a number of Dams were constructed that have since accumulated sediments that would contain mercury. An example of this could be the Santiam River which would explain the mercury levels in this river.

The sediments collected behind the dams need to be evaluated for removal as a means to reduce and control mercury in the Willamette River.

The mercury and gold mining sites, current and past also need to be evaluated for control of residues of mercury at these sites. Presently there is not any known effort of this occurring. The Department of Oregon Geology and Minerals Industries (DOGAMI) needs to be involved in this effort of identifying the sources of mercury and actual as well as potential for mercury contamination in the Willamette Basin. DOGAMI oversees the NPDES wastewater discharge program for mines in Oregon. However, the DEQ has not involved DOGAMI in development of this TMDL program. This needs to change - the sooner the better. There is also not any clear statement by DEQ as to what are the specific limits for meeting mercury in the water, sediments, and suspended solids to use as a goal or discharge limit when treating the mercury at its source.

There may be other examples and locations of actual positive and measurable means to remove and reduce mercury in the Willamette Watershed. We can only hope that the DEQ will address these.

Increased and expensive mercury reduction programs for cities and counties that do not have any mercury to control is a waste of resources in light of the actual known sources of mercury and ODEQ's failure to recognize and address the actual sources of mercury and develop an program to reduce these known and documented sources.

Review of Current Environmental Programs

Counties serve a variety of roles when it comes to protecting the environment and managing pollution while providing necessary maintenance and operation of local infrastructure. The current regulatory requirements set by the federal and state government provide guidelines and rules for local agencies to follow to limit their impact on the environment.

The proposed TMDL rules will be extremely burdensome for small communities who lack the resources to design and create the type of programs needed to identify and reduce a roughly estimated 90% of non-point source mercury pollution especially when it is not even present. Just look at the lower levels of Mercury in the solids in the Lower Willamette as an indication of this. The new requirements are trying to reduce pollution that is beyond the control of local government.

Listed and briefly discussed below are concerns for each DEQ program presently in effect.

NPDES Stormwater Permits

The largest, and most encompassing regulatory framework for counties is the National Pollutant Discharge Elimination System (NPDES) which includes the Municipal Stormwater Program (MS4) that manages the way municipalities operate stormwater runoff from essential infrastructures such as roads and streets. MS4 permits require regular reporting and analysis to the DEQ to protect our natural streams and rivers. Under the new TMDL, NPDES permits up for renewal will need to include mercury minimization efforts for identified point sources within the Stormwater Management Plan. How do we identify sources to control and remove any mercury when it is not there?

Additionally, jurisdictions with an MS4 permit become responsible for the non-point source pollutants outside of the MS4 permit boundary. For these areas, the

local municipality will need to implement the six control measures required for non-permitted urban DMAs. However, there is no clear definition for "MS4 permit boundary" to identify the areas that fall into this category. The vague requirement creates additional uncertainty and makes it more difficult for local municipalities to comply.

Both MS4 Phase I and Phase II permit holders will be expected to show their progress toward attaining a 75% reduction benchmark without a firm standard of measurement, increasing the risk of noncompliance.

How can this be done when about 90+% of the source of mercury is grossly misidentified by DEQ is coming from the atmosphere but cannot be detected in the soils or vegetation it supposedly settles on.

Stormwater Management requirements for non-permitted urban DMAs

The new requirement to include small communities will expand mercury requirements to local governments not well equipped to identify sources of mercury pollution and implement an extensive reduction program. Small municipalities, including two additional counties, will also be required to reduce mercury loads in stormwater discharges by 75%.

The lack of guidance provided to help small communities identify mercury sources sets up rural communities for failure. Small communities do not have staff, expertise, or resources to do this work. The financial strain and logistics of creating and adopting a plan within 18 months make this requirement impossible to meet.

This proposed requirement is ridiculous especially since they are not associated with any source of mercury. This proposed requirement must be deleted.

Construction Stormwater Permits

TMDL regulations typically coincide with NPDES requirements since they often overlap and both flow through DEQ who acts as the enforcing agent. The new TMDL would deviate from NPDES for non-permitted, urban DMA's when performing construction activities that would displace soil. Under the proposed TMDL:

1. A local ordinance or similar regulatory authority is needed to provide legal enforcement for illicit discharges.
2. Construction projects that disturb a minimum of 1/2 acre require an Erosion and Sediment Control Plan.
3. Construction projects that disturb a minimum of 1/4 acre require a site-specific, stormwater management approach.

The proposed language will require additional programs that no longer coincide with the regulatory framework established by NPDES. Each layer adds administrative cost and requires reporting on outcomes that are difficult to measure and have high compliance standards.

Again, this proposed requirement will result in zero reduction of mercury since they are not associated with any source of mercury. This proposed requirement must be deleted.

Mercury loading is from sources other than Linn County's Rural Area

The DEQ conclusion or premise that are the foundation for the draft TMDL estimate is that the mercury loads from all combined, non-permitted urban area stormwater discharges is approximately one percent of the overall load in the entire Willamette Basin. The TMDL requires a 75 percent reduction of mercury loads across this [one percent] sector".(Section 13.3.1.11.2; Draft (Revised Willamette Basin Mercury) TMDL for Public Comment; July 3, 2019, p. 97.) This statement more than any other in the Draft Mercury TMDL demonstrates the de minimis impact such sources potentially contribute.

The analyses does not acknowledge or even consider that this one percent sector is so diluted that mercury will not be detected and this sector that is contained in sediments that would be considered clean are presently actually diluting and keeping the levels of Mercury in the Willamette River lower as Mercury migrates from Lane County in the South going north to the Columbia River. Knowing that 99+% of mercury loading is from other sources, it is unreasonable to expect Linn County or any other rural county to create an additional review process, hire additional staff, create a new Mercury monitoring program, enforcement mechanisms, etc. to control something that is not even there.

Why isn't the DEQ addressing this other 99% of the source of mercury?

The DEQ standard for rural counties in the Draft Mercury TMDL is higher (more prescriptive, stricter) than the EPA standard for urban areas. It is requested that the specific triggers and thresholds in Minimum Control Measures #5 and #6 that are not part of EPA's guidance, are beyond the 1200-C program, and are not necessary in the rural setting.

Municipal discharges (i.e., permits for discharges from MS4's) require controls to reduce the discharge of pollutants to the maximum extent practicable (MEP). This MEP standard is used for large and medium MS4's. (Clean Water Act, Section 402(p): NPDES, Municipal and Industrial Stormwater Discharges.) For small (Phase II) municipal dischargers, the MEP standard is also used, and loosely defined by EPA Guidance as satisfying the Six Minimum Control Measures. (Stormwater Phase II Final Rule; Small MS4 Stormwater Program Overview; Fact Sheet revised Dec. 2005.) The Draft Mercury TMDL DEQ document imposes a higher, more restrictive, and more prescriptive standard than the MEP standard used for urban stormwater, and a higher standard than the EPA Guidance.

Prescriptive triggers added by DEQ in Control Measures #5 and #6 go beyond reasonable management measures applicable to urban DMA's. In this case, they are applied to the "non-permitted urban DMA's with a population of 5,000 or greater "(Table 13-10; Draft (Revised Willamette Basin Mercury) TMDL for Public Comment; July 3, 2019.). Thus, these standards go beyond EPA guidance advised for bigger urban areas (above 10,000), and beyond EPA guidance to not apply (i.e., allow a waiver) for population densities below 1,000 people/sq. mile.

If the DEQ decides to maintain the 1h acre threshold of requiring full Erosion & Sediment Control Plans (ESCP) in the Final Mercury TMDL, then DEQ should consider amending the 1200-C program (which delegates ESCP permitting to

DEQ where land disturbing threshold is one acre or more) to 1h acre or more, to avoid the burden this will cause on small cities and rural counties within the Willamette Basin.

Again, we are talking about controlling less than 1% of the Mercury problem which is not a problem since it is so diluted. Can the DEQ provide an answer why this is the case?

The Draft document needs to specifically state how Linn County or any other Rural County would demonstrate compliance.

Mercury loading is based on a wide variety of diffuse sources, conditions, variable soils, and weather. According to the Oregon Association of Clean Water Agencies (ACWA), the Draft Mercury TMDL includes invalid bases for methodology. For these reasons, Linn County is concerned as to how specifically we would demonstrate compliance.

The Draft TMDL requires a 75 percent reduction of mercury loads across the sector of all "non-permitted urban DMAs", which is a 1percent estimated total load. This insignificant impact would be impossible to demonstrate specific to the County. We cannot get into a situation where compliance cannot be demonstrated. The increased level of implementation (financial, political, and technical) as laid out in the Draft Mercury TMDL creates an unacceptable cost/benefit imbalance. This is especially true as a rural area management OMA (Linn County), with a de minimis effect on mercury. The necessity of creating new staff positions, reporting mechanisms, field review, and enforcement is a financial impact on the County that is not going to change mercury levels.

Linn County is concerned regarding application of an Illicit Discharge & Detection Elimination program regarding mercury loading for the rural area. This program and EPA guidance targets industrial, commercial, residential urban, and municipal activities such as landfills, fleet storage, etc. Our biggest concern is the cost of an outfall field survey over 2,297 square miles of rural valley, hills, and mountains - which simply does not make sense. While this is required (as one of the six Minimum Management Measures) in Urban Phase 2 jurisdictions, they are still cities, and applicable where the MS4 serves an urban population. Perhaps the document could address what a rural area Nonpoint Source IDDE program would entail.

Again, we are talking about controlling less than 1% of the Mercury in the form of uncontaminated sediment while there are not any proposed controls for 99% of the problem as proposed by the DEQ. Why is that happening?

Summary

The proposed updates to the Willamette Mercury TMDL will create considerable expense and time for Linn County as well as other Counties, Cities, and businesses to comply with.

Linn County as well as others do not have the resources to identify the sources of Mercury within the County and develop a means to control and reduce levels of Mercury as ODEQ has implied and have proposed that they will require them to do.

Existing data shows that the primary source of Mercury in the Willamette Basin comes from the headwaters of the Willamette River located in Lane County as well as the mines and geologic resources in the Cascades. There is not any actual sample results or data that shows that Mercury is deposited in the Willamette Valley from the atmosphere. The ODEQ seems to want to concentrate on atmospheric deposition of Mercury that they have not any documentation of other than hypothetical as a means to develop a means to reduce Mercury. As a result, this will result in a waste of time and money for all involved in trying to reduce Mercury levels following guidance from the ODEQ that has been recklessly developed.

This is a waste and a shame when it is recognized that all this effort as proposed by DEQs TMDL will over time eventually result in an actual increase in the levels of mercury in the water, sediments and fish of the Willamette River. This is the result of the failure of the ODEQ to properly characterize the source and origin of Mercury that is presently in the Willamette River. It is also the result of the failure of the ODEQ in being able to manage it using their existing approved regulatory programs.

The DEQ needs to focus on the known and measured sources of mercury as the TMDL plan which it presently does not. There are also other existing regulatory programs and agencies that the DEQ could use to address this problem. Why they have not done that is an important question that needs to be answered.

The Total Mercury Designated Load (TMDL) regulations proposed by the Oregon Department of Environmental Quality (DEQ) need to be deleted or at least redeveloped and rewritten in acknowledgement of the adverse environmental and adverse public health consequences that will occur if they are adopted and implemented as proposed. The redeveloped TMDL needs to focus on the actual and known sources of mercury.

Please contact me if you have any questions or need further information

Regards

Charles R. Knoll, PE Linn County Engineer

Cc: Richard Whitman, DEQ Director
Justin Green, DEQ Water Quality Administrator
Priscilla Woolverton, Willamette Basin Coordinator (DEQ) Darrin Lane, PE,
Public Works Director, Linn County Brittany May, Linn County Environmental
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e-mails to:

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August 29, 2019

**33. Brian
Nicholas,
Marion
County
Public
Works,
Oregon**

Andrea Matzke Basin Coordinator
DEQ Water Quality Division
Oregon Department of Environmental Quality 700 NE Multnomah Street, Suite
600 Pollland, OR 97232

Subject: Comments regarding the Willamette River Mercury Total
Maximum Daily Load (TMDL) Development
Dear Andrea,

We are writing this letter to provide comments on the public review drafts of the
Willamette River Mercury TMDL dated July 3, 2019 (TMDL), and the Technical
Support document dated June 1, 2019.
Lack of County Represented Participation

Marion County was disappointed to find that the Mercury TMDL technical
advisory committee included participants from many organizations and trades but
it did not include anyone with experience working at a County level. With such a
substantial impact to counties, having county governments at the table would
have helped to provide a more implementable document. Instead, Marion County
is concerned that the proposed standards include a number of elements that will
place overwhelming demands on our already limited resources with no
measurable improvement to Mercury reduction within the Willamette basin.

Section 13.3.1.11 Local Government: Cities and Counties

One of our most significant concerns with the TMDL is the extension of the six
minimum stormwater control measures to county areas outside of those already
covered by our MS4 Phase II NPDES permit. This requirement would be a
significant impact to most counties. The six minimum control measures were
originally designed to be implemented within urbanized areas not in rural, less
densely populated areas such as where Marion County's TMDLs would take
effect. Due to the geographic range covered by county boundaries, implementing
these requirements would take significant time and resources without a clear
benefit to water quality. Marion County staff could be required to travel as far as
60 miles (about one hour each way) to visit sites implementing these minimum
measures.

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Road Projects

Another concern is the minimum threshold of 1/2 acre for post-construction
projects. These additional requirements for county road projects will lead to
increased project costs and, given modern budget constraints, will negatively
impact our ability to keep our road systems maintained in safe working order. In
addition, the limited width of existing road rights-of-way may require the County
to purchase farm land to meet requirements, which will add significant additional
costs. The County is also concerned that having post-construction stormwater

facilities built in areas where no other water quality facilities are located will have a negligible benefit and not be reflective of the overall cost.

Private Development and Community Planning

Marion County finds the proposed post-construction measures to be problematic as the perceived intent is to implement post-construction requirements throughout all areas of the County, including just outside of smaller cities (under 5,000 population), which have no post-construction requirements. This will yield unintended consequences like disjointed community development and planning as well as increased cost of housing in rural and unincorporated areas.

Illicit Discharge Detection and Elimination

The proposed illicit discharge control measure requires the County to develop an illicit discharge program county-wide, including in rural and largely isolated areas of the County. In our experience the majority of illicit discharge notifications in these areas have been related to agricultural properties and are referred to the Oregon Department of Agriculture. We find it problematic that we might be expending limited resources to document and investigate issues that Marion County is unable to enforce. The proposed illicit discharge control measures will increase administrative costs, will require more staff time to manage, and will ultimately frustrate the public if immediate action cannot be taken.

Recommendations

Marion County would like to encourage DEQ to broaden the requirements set forth in the Mercury TMDL standards to allow for jurisdictions to develop the minimum control measures in a way that is tailored to their needs. We are in full support of reducing mercury loads in the Willamette basin, but we believe the proposed general and prescriptive standards require Marion County to expend funds inefficiently and with negligible benefit to water quality. Implementing minimum control measures that were designed to improve water quality in urban areas to the County's rural and geographically isolated areas will not fit the needs of those regions. However, if counties are empowered to tailor construction erosion, post-construction and illicit discharge programs to fit the needs of the broader communities we serve, we feel we could be much more successful in reducing impacts of erosion and mercury loads.

Thank you for consideration of these comments. Very Respectfully,

Brian Nicholas, PE Director
Marion County Public Works

August 30, 2019

**34. Michael
Jordan,
Bureau of
Environmental Services,
City of
Portland,
Oregon**

Andrea Matzke, Basin Coordinator
Oregon Department of Environmental Quality 700 NE Multnomah Street, Suite
600
Portland, OR 97232

Submitted to: WillametteMercuryTMDL@deq.state .or.us

RE: City of Portland Comments - Revised Willamette Basin Mercury TMDL
The City of Portland's Bureau of Environmental Services (BES) appreciates the opportunity to provide comments on the Proposed Willamette Basin Mercury TMDL. BES manages Portland's wastewater, stormwater, and surface water systems to protect public health and the environment. As an operator of a large Publicly Owned Treatment Works (POTW) and Municipal Separate Storm Sewer System (MS4) with significant requirements under the Clean Water Act, the City of Portland is a key stakeholder and partner in this TMDL and associated Water Quality Management Plan (WQMP).

Specific comments on the proposed TMDL are provided below and identified by the corresponding section reference. Where applicable, alternate or amended language is provided. Recommended additions to language are noted as italicized, bold and underlined and language that should be removed is noted as sb'ikethrough. Thank you for the opportunity to provide comments on this important matter.

COMMENTS - GENERAL

- Allocation Table (Section 10, Table 10-1, p62)

Please clarify information in Table 10-1, particularly regarding source sectors and associated allocations. Some sectors are repeated with conflicting allocations, making it difficult to understand how each sector is defined and what the requirements are. For example, Non-Permitted Urban Stormwater is included both as its own sector and with the "general nonpoint source" sector with allocations of 75% and 88% reductions, respectively .

COMMENTS - STORMWATER

- MS4 Phase I Requirements (Section 13.3.2.2.1.p117)

The City appreciates the Oregon Department of Environmental Quality's (DEQ) acknowledgment that existing MS4 Phase I permits and associated municipal stormwater programs are already achieving mercury reductions through well-established controls. In general, the proposed MS4 Phase I requirements are reasonable, but some language as written is problematic for implementation and refinements are needed. Language in the WQMP should serve as guidance to permit writers while allowing them flexibility to craft appropriate language during the permit renewal process. Please consider adjustments to the MS4 Phase I language as described below:

-
- o Develop and submit a mercury minimization section with the stormwater management strategy with the second annual report of the renewed permit term, that includes:
 - o Evaluation of current actions and their relative effectiveness of reducing the amount of solids discharged into the MS4 system (similar to the actions currently required in Schedule A of the permits); and
 - o An effectiveness evaluation monitoring strategy to inform implementation of future control measures.

It's unclear if the "mercury minimization section" referenced here is intended to be a stand-alone submittal, part of an annual report, or a Stormwater Management Plan (SWMP) revision. The latter is inappropriate. A new SWMP is generally required upon re-issuance of the MS4 permit, so this provision as written would force permittees to revise their SWMPs within two years of having drafted an entirely new SWMP, which is a very resource-intensive process and technically constitutes a permit modification. The SWMP comprehensively addresses all pollutants associated with stormwater runoff (including and especially sediment), so creating a duplicative or obsolete section within the SWMP that repeats all the existing pollution reduction strategies simply is not useful. Please modify language in the first bullet as noted to clarify this as a stand-alone submittal along with, or as part of, the second annual report. In the second sub-bullet, please remove the term "monitoring" and replace with "evaluation" to allow both qualitative and quantitative methods for evaluating control measure effectiveness.

- o Continued implementation of the actions described in the stormwater management plan that are effective for mercury reduction, along with documentation in each subsequent annual report (beginning with the third year annual report) of implementation progress.

Please remove the words "beginning with the third year annual report" from this bullet as noted. We are already implementing these actions and reporting on them in our MS4 annual reports.

- o An analysis of the effectiveness of the actions taken and qualitative pollutant load reductions achieved in the fourth annual report. Due to data limitations, the wastewater allocation attainment analysis, pollutant load reduction evaluation, and mercury benchmarks for mercury are not applicable in the first permit cycle after the TMDL is finalized.

It's unclear how the first statement in this requirement substantively differs from the requirement described under the first bullet to "evaluate current actions and their relative effectiveness." Please clarify or remove this duplicative requirement. Also, please adjust the second statement as noted for further clarification.

- o Submittal of monitoring data in the appropriate DEQ data submission template, pollutant load reduction evaluation attainment analysis.

Please see related comment above. The PLRE and the WAA are existing requirements of the MS4 Phase I permits and should be addressed as noted previously. Please remove the PLRE and WAA references from this bullet.

- Industrial Stormwater Sector (Section 9.4.2 & 13.3.2.2.2)

The potential contributions of atmospherically-deposited mercury from stormwater managed through all of the general stormwater permits covering industrial and construction activities ... were implicit within these modeled loads from urban stormwater runoff (p58) ... mercury reductions achieved through current and future general stormwater permit requirements for permitted activities conducted within the MS4-permitted jurisdictions will contribute to the aggregate stormwater sector reductions needed to achieve the wasteload allocation. (p118)

The City strongly disagrees with DEQ's decision to not explicitly model industrial stormwater as a unique source sector or require any new mercury or sediment controls in the 1200-Z general stormwater permit. The industrial

stormwater sector and certain industry types in particular present unique sources of mercury that warrant a wasteload allocation and associated controls. Since 2012, DEQ has required mercury monitoring in the 1200-Z permit as both a sector-specific and an impairment pollutant, so a robust data source was available for DEQ's development of the TMDL. A brief analysis of industrial stormwater runoff data from 1200-Z and 1200-COLS sites in Portland showed an average mercury result of 94 ng/L for waste-related industrial facilities (facilities with SIC codes 5015, 5093, and 4953 or used motor vehicle parts/auto salvage, scrap and waste materials, and refuse systems, respectively). The analysis showed an average mercury result of 65.4 ng/L for all other industrial facilities.

DEQ is not requiring any additional controls or management strategies for this source sector and is instead relying on existing 1200-Z benchmarks for total suspended solids (TSS). DEQ defends this approach by stating "The 1200-Z permit includes a reduced benchmark for total suspended solids for discharges into the geographic regions of the Portland Harbor (approximately the lowest 10 miles of the Willamette River) and the Columbia Slough." According to the WQMP, there are currently 629 1200-Z registrants in the Willamette Basin. Please note that over 400 of these permit registrants are not located in the Columbia Slough/Portland Harbor region. Therefore, most existing industrial facilities will continue to be allowed to discharge TSS at unacceptably high levels throughout the basin as the Willamette flows into Portland. Please consider additional controls and/or a reduced TSS benchmark in the 1200-Z permit basin wide.

- Nonpoint source stormwater management requirements for MS4 Permit holders (Section 13.3.1.11.1)

As DMAs for nonpoint sources of mercury, MS4 permit holders must also implement the six stormwater control measures, as described in Table 13-10, in their jurisdictional areas outside of the urbanized area covered by their permit. (p96)

The application of the MS4 six minimum measures in non-MS4 areas is problematic, particularly in Portland which has a combined sewer area that is already covered as a separate source in the TMDL and has a large area served by Underground Injection Controls (UICs), which is regulated by the Safe Drinking Water Act and covered by the City's Water Pollution Control Facility (WPCF) UIC permit. Please clarify that DEQ's intention for these non-MS4 areas is to rely on existing regulatory mechanisms and not the six minimum MS4 measures. Please clarify further that the education and outreach effectiveness evaluation listed in Table 13-10 does not apply to existing MS4 Phase I permit registrants, as it is not a requirement in Section 13.3.2.2.1 of the WQMP and Phase I communities are already conducting education activities as required by the MS4 permit.

Furthermore, the City is concerned that DEQ's broad-brush approach with the six minimum measures takes limited OMA and DEQ resources away from more important priorities. The rationale for such an approach was not adequately addressed in the TMDL, as it was not demonstrated how each of the six measures will actually contribute to reductions of mercury. The Illicit Discharge Detection and Elimination (IDDE) requirement, for example, will require tremendous resources for parties to implement with little to no effect on mercury sources, while the focus should be on erosion control.

- Monitoring and Evaluation (Section 13.6, p124)

DEQ and EPA are currently developing an Assessment and Monitoring Strategy to Support Implementation of Mercury Total Maximum Daily Loads for the Willamette Basin. This monitoring strategy will be used to evaluate effectiveness of DMA and responsible person implementation strategies at meeting allocations and may require certain DMAs to collect data. The monitoring strategy will also be used to determine progress in the Willamette River and its tributaries toward meeting the total mercury loading capacity of 0.14 ng/L, methylmercury fish tissue criteria of 0.04 mg/kg, and instream total suspended solid surrogate allocations. DEQ will finalize this monitoring strategy after the issuance of the TMDL.

We request that this Assessment and Monitoring Strategy include stakeholder involvement or, at a minimum, be made available for public comment and/or OMA input prior to implementation.

- Implementation plans (Section 13.1.1)

DEQ typically gives DMAs and responsible persons 18 months to submit new or updated implementation plans following the issuance of a TMDL and WQMP. For this WQMP, DEQ will continue using the 18-month timeframe for implementation plan submittal. For point sources, wasteload allocations and/or other management strategies identified in the TMDL and WQMP will be incorporated into renewed NPDES permits as enforceable provisions. (p73-74) MS4 permit holders must also develop and submit a

TMDL implementation plan that demonstrates how nonpoint source load allocations will be met. This plan must include management strategies to reduce runoff and erosion that discharge directly to waterbodies. (p97)

Clarification is needed around these statements and associated requirements. The City and others just submitted updated TMDL Implementation Plans as required by DEQ following the recent 5-year review. Portland's implementation plan (dated March 1, 2019) already covers mercury and describes strategies that the City is using to address this and other TMDL pollutants. Will the City be required to re-submit this plan in 18 months? Please clarify or amend the requirement to make an exception for DMAs that already have TMDL Implementation Plans that address mercury .

COMMENTS -WASTEWATER

- Allocations (Table 10-1 , p62) and NPDES Wastewater Permits (Section 13.3.2.1)

Permit categories under the aggregate 10 percent reduction wasteload allocation include: major and minor domestic sewage treatment plant permits; major and minor industrial wastewater permits; and wastewater discharges covered under non-stormwater general permits. (p113) ... DEQ determined that the potential mercury load from minor STP discharges is an insignificant contribution to the estimated 0.8 percent of total mercury load from all STPs within the basin. Therefore, no additional controls or monitoring will be required from minor STPs toward achieving the 10 percent overall wastewater sector reduction of 0.44 g/day or 0.16 kg/ yr (p114) .

Table 10-1 and Section 13.3.2.1 describe the percent reduction required by municipal wastewater point source dischargers, but make unclear or conflicting statements as to whether the 10% reduction applies only to major municipal NPDES dischargers or to both major and minor dischargers. The tables and text should be clarified so that it is understood that only major municipal NPDES dischargers are subject to the 10% reduction requirement.

- Draft Technical Support Document - Average POTW Mercury Concentrations (Table 5-9, p89)

Table 5-9 specifies an average mercury concentration of 14.1 ng/L for the City of Portland Tryon Creek facility. The City notes that the data provided to DEQ to calculate this average consisted predominantly of data from 2004 which was prior to upgrading the TCWTP aeration basins and that the dataset contained one extreme outlier from 2010, which biased the mean high. The City recommends that DEQ use the median concentration as a more accurate representation of effluent concentrations for all facilities.

- Draft Technical Support Document Combined Sewer Areas

CSOs are predominantly composed of stormwater and THg loads associated with CSOs are considered to be already represented by estimates of THg load associated with urban stormwater . (p106)

Clarification is needed as to whether and how contributions from CSOs were included in mercury loading calculations, and what "urban stormwater load" is

being referenced in the text. This clarification would provide a better understanding of modelling inputs to stormwater loads as well as aid in evaluating the effectiveness of the City's mercury minimization efforts managed under the MS4, NPDES wastewater, and UIC permits.

Thank you again for the opportunity to provide input. If you have any questions regarding these comments, please contact Loren Shelley at 503-823-5275 (or loren.shelley@portlandoregon.gov) or Amanda Haney at 503-823-7230 (or amanda.haney@portlandoregon.gov) for more information.

Sincerely,

CC: Pablo Martos, Oregon Dept. of Environmental Quality
Dorothy Sperry, Port of Portland MS

35. Jeff Warren	<p>Bohemia dredging</p> <p>My name is Jeff Warren. I am writing in regards to the TMDL in the Willamette basin, specifically in regards to Bohemia Mining District suction dredge ban. I support Bohemia claim owners need for more time to send in research, as your research is inadequate. You showed no proof at meetings of how dredging propagates the movement of mercury. When in fact dredging recovers 98 percent of the mercury that goes through the dredge. As a member of Bohemia Mine Owners Association, I am concerned about our ability to provide for our community minded events.If dredging is band we will loose a efficient tool to provide gold for our events .</p> <p>8/30/2019. Jeff Warren</p>
36. Dan O'Brien, Greenberry Irrigation District, Oregon	<p>Greenberry Irrigation District DEQ Public Comment RE: WB Hg TMDL Public Comment Hg TMDL for Greenberry Irrigation District</p> <p>First, it is greatly appreciated that Priscilla and Andrea of DEQ visited the district earlier in the month, have seen operations and how our infrastructure works. This background allows DEQ a firsthand window on the district's environmental aspects, while giving the district the opportunity to learn more about current and future concerns.</p> <p>Greenberry ID is a relatively new irrigation district, formed in the 1990's and began delivering water in 2009, our water source being a Bureau of Reclamation stored water contract from the Willamette Project. Once we divert the stored water from the Willamette Project Dams from the Willamette River, we pipe it directly to member fields or we put it into waters of the State; Winkle Lake and the old river channel it's a part of, and Muddy Creek, both natural stream channels that we use for conveyance. (Please see attached map) Our members re-divert the water for their use. In no case is there tail-water. It is both district and member obligation to operate without waste.</p> <p>Operating without waste is a legal requirement of our BOR contract, as well as our State water permits. Further, the district is its own water master; in our district – member contracts we also require no waste, so there is yet another layer beyond the federal and state oversight; we also control internally through our district management and board members. Beyond these bureaucratic measures, economics deter waste: Waste water costs money, and inputs and soil that flow off the field with wasted water have both financial and environmental aspects.</p> <p>Being a new district, our infrastructure is also new; there is a large degree of control and monitoring. The person in charge of operations runs the infrastructure by his iPad. We know how much water is being pumped, what valves are open and how much, how much electricity is being consumed and the state of the pumps. Water meters tell us how much water is going where. All of this is real-time. At the end of the irrigation season we know how many total acre-feet we've diverted, and we add up how much we've delivered to members, and it turns out there is not significant loss in the district system.</p> <p>Our members apply water by piped system of one kind or another; traveling gun, pivot, linear, wheel line or some sort of drip or mister system. In rare instances there will be a mechanical failure, but these are measured in gallons, not in acre/feet, and it would be a very rare occurrence that has environmental</p>

consequences. There is no ditch irrigation or constructed canals in the district.

The district does not own any riparian structures in the form of revetment, or stream barbs, although the district has easements to its infrastructure and in some cases permitted the projects. These are in the immediate reach of the Willamette River upstream of the pump station. However, installation and startup phases are past; it is the landowner who is responsible for the maintenance of these projects, which also importantly protects the common access road. In general, establishment of these structures poses the greatest risk of soil movement the following winter or two; once vegetated they are generally stable unless there is a prolonged high water event that compromises them. There is more information on how the structures are constructed and maintained through the Dept. of State Lands, Corps of Engineers permitting and Bureau of Reclamation environmental assessment processes. Post construction, most maintenance is comprised of establishment and then maintaining vegetation; most anything else would require a permit, in which case there is both state and federal oversight.

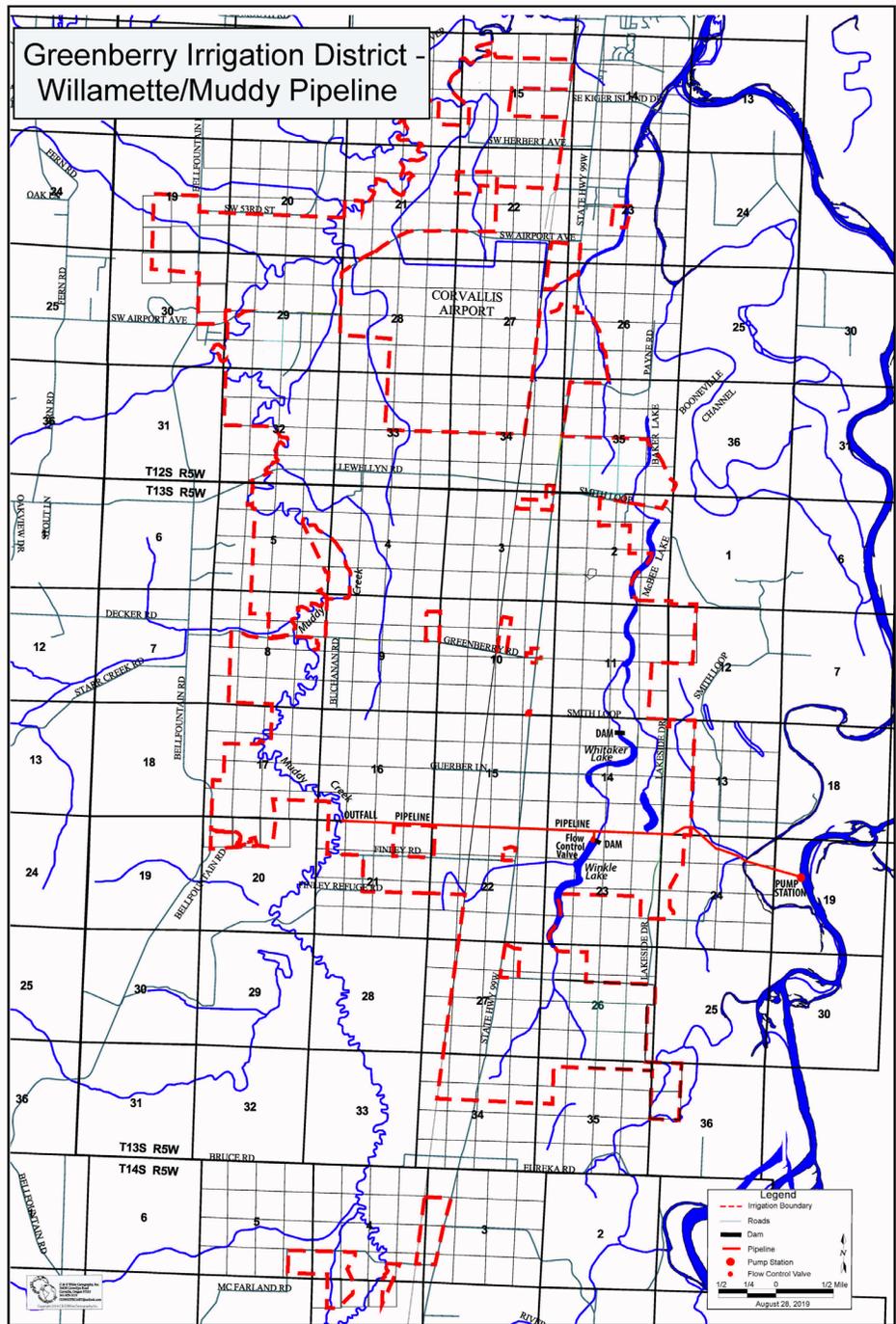
Other structures are also on private land, in some cases so private the district asks permission to visit its infrastructure. The dams on Winkle and Whitaker Lakes (both much less than 10 feet high) and the outfall on Muddy Creek are well established and mostly trouble free, as there is generally minor erosive current issues impacting these structures. The district owns no land; when members joined the district, the district-member contract stipulates that the district may reasonably install infrastructure and would be granted easements on that property and throughout the district. In all cases, natural events pose a much greater threat of soil movement in winter than any erosion a human is likely to cause in irrigation season in a piped system.

To recap, the district has a high degree of control of its water flows and deliveries to edge of member property, and has no tail-water returns. The riparian areas it borders are on private land and at this point not our immediate responsibility in terms of maintenance. However, as the district established some of these structures, it also established the erosion control measures (vegetation) mandated by various agencies, and of course maintains an interest in their wellbeing. Considerable effort had been made to minimize risk to the environment during construction, barely a decade ago, and ongoing operation is also as risk free to the environment as possible, aided by a hands-on board of directors, current technology, and member-farmer awareness.

Given the nature of the district, we would submit Greenberry Irrigation District poses a very minor threat of impacting a TMDL for most anything, and hopes not to be burdened by unnecessary regulatory monitoring or reporting.

Please let us know if you have additional questions or need clarification.

Best regards,
Dan O'Brien
Manager



From: WOOLVERTON Priscilla
 Sent: Tuesday, August 20, 2019 1:56 PM
 To: 'Dan O'Brien'
 Cc: MATZKE Andrea, WOOLVERTON
 Subject: RE: WB Hg TMDL: Greenberry Irrigation District

Hi Dan,

Thanks again for taking time yesterday to facilitate a site visit with me and Andrea; we gained a better understanding of the GID system.

I wanted to follow-up again regarding your email below in light of some of the things we went over yesterday. Please provide the following, additional information in your submission to DEQ's public comment process. This information will provide additional clarity for the review team:

- Specifically name the surface waters that receive diverted water, e.g. Whitaker Lake, Winkle Lake, Muddy Creek, etc.
- Briefly include info about structures and maintenance, for example:
 - o Riparian vegetation is required by and maintained according to BOR requirements [location and extent of riparian veg]
 - o Spur dikes along Willamette River to help protect stream bank [location and purpose]
- Update the map to show the location of the pipeline from the Willamette to Muddy Creek, including where the district's "water works" are located, i.e. district-owned or operated canals, pump station on Willamette, flow control gate on Winkle Lake, etc. (hand drawn insertions on the map are fine as long as it is easily legible and the geographic location is well-marked).

Please call or email if you have questions or concerns.

Best regards,
Priscilla

Priscilla Woolverton | Upper Willamette TMDL Basin Coordinator
Western Region | 165 E. 7th Ave., Ste. 100, Eugene, OR 97401-3049
woolverton.priscilla@deq.state.or.us | 541.687.7347

From: WOOLVERTON Priscilla <Woolverton.Priscilla@deq.state.or.us>
Sent: Monday, August 19, 2019 12:18 PM
To: 'Dan O'Brien' <obriend@peak.org>
Cc: WOOLVERTON Priscilla <Woolverton.Priscilla@deq.state.or.us>;
MATZKE Andrea <MATZKE.Andrea@deq.state.or.us>
Subject: WB Hg TMDL: Greenberry Irrigation District

Hi Dan,

Thank you for providing this information. I've printed off copies of the map for our site visit this afternoon.

If you would like to submit this information as public comment, please send the information below in an email to: WillametteMercuryTMDL@deq.state.or.us

regards,
Priscilla

Priscilla Woolverton | Upper Willamette TMDL Basin Coordinator
Western Region | 165 E. 7th Ave., Ste. 100, Eugene, OR 97401-3049
woolverton.priscilla@deq.state.or.us | 541.687.7347

From: Dan O'Brien <obriend@peak.org>
Sent: Thursday, August 15, 2019 4:18 PM
To: Priscilla.Woolverton@state.or.us
Subject: Greenberry ID

Hi Priscilla,

Per our discussion the other day, but a week later than expected, here are my thoughts to include in an exclusion statement:

“Greenberry ID is a relatively new irrigation district, formed in the 1990’s and began delivering water in 2009, our water source being a Bureau of Reclamation stored water contract from the Willamette Project. Once we divert the stored water from the Willamette River, we pipe it directly to member fields or we put it into waters of the State; natural stream channels that we use for conveyance, from which our members re-divert the water for their use. In no case is there tail-water. It is both district and member obligation to operate without waste.

Operating without waste is a legal requirement of our BOR contract, as well as our State water permits. Further, the district is its own water master; in our district – member contracts we also require no waste, so there is yet another layer beyond the federal and state oversight; we also control internally through our district management and board members. Beyond these bureaucratic measures, economics deter waste: Waste water costs money, and inputs and soil that flow off the field with the waste water have both financial and environmental aspects.

Being a new district, our infrastructure is also new, there is a large degree of control and monitoring. the person in charge of operations runs the infrastructure by his iPad. We know how much water is being pumped, what valves are open and how much, how much electricity is being consumed and the state of the pumps. Water meters tell us how much water is going where. All of this is real-time. At the end of the irrigation season we know how many total acre-feet we’ve diverted, and we add up how much we’ve delivered to members, and it turns out there is not a lot of loss in the system.

Our members apply water by sprinkler of one kind or another; traveling gun, pivot, linear, wheel line or some sort of drip or mister system. In rare instances there will be a mechanical failure, but these are measured in gallons, not in acre/feet, and it would be a very rare occurrence that has environmental consequences.”

Please find attached a map of the district.

Best regards,

Dan

Dan O’Brien
Manager
Greenberry Irrigation District

Bohemian Mining Dredging Ban

**37. Odessa
Smeltzer**

Andrea Matzke Basin Coordinator,
My name is Odessa Smeltzer. I am writting in regards to the TDML in the Willamette Basin, specifically in regards to the Bohemia Mining District suction dredging ban.

I support Bohemia claim owners need for more time to send in research, as your research is inadequate. I strongly encourage you to make sure there is research included that shows the benefits of dredging, to the watershed environment.

Shutting an industry down without adequate research is disgraceful, and I urge you to include unbiased research that will allow a properly educated decision to be made. Specifically, zero samples showing mercury on sharp or Brice creeks have been acquired. Making your claims entirely false. I will stand with them as they fight and appeal any decision made, if more time and research inclusion is denied.

Bohemia mining district is the oldest and largest mining district in the state. Claim owners' livelihoods are at stake. They should have the right to be included in the decision-making process, and be allowed more time than 2 months, to review your claims.

Bohemia mining district is not just about mining. They are a corner stone of the city of Cottage Grove. They fund an outdoor school for young children. They give scholarships to high schoolers. They are behind Bohemia Mining Days, an event that includes the entire city. They have a sunrise breakfast on top of the mountain. This year nearly 700 people showed up. They fund a museum. They have large forest clean up events. Tours. Caravans. Bohemia mining district is more than dredging. It is the backbone and the culture of an entire city. Our miners give back. Our miners remove 98 percent, or more, of mercury from sediment run through their dredges. They remove lead. They keep our forests clean.

I urge you to consider, deeply, the impact of your decision. And I urge you to include claim owners in the Bohemia Mining District in making any decisions. And to allow them an honorable amount of time to understand and research the proposed suction dredging ban.

Thank you for your time and consideration,
Odessa Smeltzer,
9/2/19

38. Tom Quintal, Willamette Valley Miners Association

Willamette Basin Mercury TMDL comments

I will appreciate DEQ excepting a power point study for the Willamette Basin Mercury TMDL by US Postal Service.

According to Alex Liverman a DEQ employee, DEQ has a 10 meg limited ability to receive email information. The scientific 40 page power point scientific study is by retired EPA scientist Joe Greene and Claudia Wise for selenium and mercury regarding fish toxicity; I will be sending a hard copy by US Postal Service certified mail.

This is the study a DEQ meeting organizer said they have never received about selenium and mercury at one of our DEQ meetings held in Eugene Oregon during the month of August 2019.

This study shows how Selenium in a stream reduces Mercury in a stream environment where fish consumption is a concern.

Thank you,

Tom Quintal

Willamette Valley Miners Association



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nVafaW6.pdf



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**39. Tasha Lee
Webb,
Oregon**

Andrea Matzke
Basin Coordinator
700 NE Multnomah Street, Suite 600
Portland, OR 97232

Re: 2019 Willamette River TMDL comment

Dear Ms. Matzke:

Permit me to comment on the proposed 2019 Willamette River TMDL. I am claim owner in the Bohemia Mining district, as well as other districts, and as such, I am a stake holder effected by the proposed suction dredging ban. I propose the ban be reconsidered indefinitely, until thorough research has been done in regards to allowing miners to clean mercury from the streams, and on locating point sources of any mercury in the vicinity.

Suction dredge mining is localized and is a negligible source of mercury transport as mining is done predominantly during low-flow periods, miles upstream from Dorena Reservoir. This Willamette River TMDL proposal unfairly burdens suction dredge miners as point-source polluters when they are not the source of the mercury. Abandoned mines on federal land are responsible. This TMDL singles out a small sector of citizens that rely on suction dredging placer mining. Upon review of the 2019 Willamette River TMDL, it became obvious the TMDL prematurely declares Dorena Reservoir and its tributaries to the 303d list. This fact is based on quotes contained within the TMDL, including:

1) “The mercury load leaving Dorena Reservoir was estimated by the modeling to be approximately 1.15 kg/yr (TetraTech, 2019).

Currently, the available data on other abandoned mine lands in the basin is not sufficient to indicate whether these lower priority sites are sources of mercury or at what significance. DEQ and EPA will continue to assess and remediate, as warranted, the remaining abandoned mine lands within the basin.

Also within the aggregated wastewater sector, DEQ is proposing to prohibit discharges from suction dredges under the General NPDES 700PM permit in streams with known mercury contamination from historical mercury and gold mining activities.”

2) Without empirical data or other validation the 2019 TMDL concludes tributary suction dredge mining creates degradation and proposes to implement the Antidegradation Policy. “Further degradation will be prevented by following Oregon’s Antidegradation Policy (OAR 340-041-0004) that provides the requirements for making decisions when considering any increases in mercury load to streams and rivers in the Willamette Basin that DEQ has authority to regulate.”

3) “Stream tributaries to the Dorena Reservoir, which is 303(d) listed for mercury and has fish advisories for mercury contamination in place. Therefore, upon renewal of the 700PM permit, DEQ will prohibit suction dredge mining in locations in streams that flow from the former Bohemia Mining District and are tributary to the Dorena Reservoir (including Row River, Brice Creek, Sharps Creek, and Champion Creek). This 2019 TMDL targets and proposes to eliminate historic suction dredge mining all together. Note the original source of the mercury was legacy mines located above Dorena Reservoir tributaries. These abandoned mines remain a problem and are not being cleaned up but are only stabilized under Risk-based Corrective Action measures.

4) “Methylmercury monitoring data are available primarily from the water column. The simplified conceptual framework used in this TMDL is that the long-term average methylmercury concentration in the water column depends on total mercury concentrations in the sediment, which in turn, depend on rates of total mercury loading from upstream. The complex transformations between different forms of mercury are not explicitly simulated; rather, they are approximated by an empirical relationship between observed methylmercury and total mercury in the water column.” This basis of eliminating suction dredge mining is not justified as not valid to stream bed disturbance. It’s important to note that these small, limited in scope suction dredge mining is conducted during stream low-flow conditions in creeks located miles for Dorena Reservoir. There’s no proof that these small personal operations adversely impact mercury mobility or fish tissue concentration.

Suction dredge miners do not introduce mercury above natural background levels in waters of the state in amounts, concentrations, or combinations that may be harmful, may chemically change to harmful forms in the environment, or may accumulate in sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare or aquatic life, wildlife or other designated beneficial uses. To the contrary, miners are willing and able to mitigate mercury encountered during their operations and wish to become part of the solution, not the target as a polluter.

5) The Willamette River TMDL states that “disturbance of mercury laden sediment in these streams is currently intermittent and releases and methylation potential are not quantifiable, these prohibitions in this known historical source area will add to reductions achieved throughout the basin toward the 10 percent aggregated WLA for the wastewater sector. “

The 2019 TMLD proposes reservoir federal stakeholder (BLM/COE/BOC) to complete Reservoir Management Measures and assess rates of mercury intrusion and then to evaluate approaches to implementing the selected strategy. It would be only logical to make this Reservoir Management Measures determination prior to listing Dorena and its tributaries as 303b impaired and banning all suction dredge mining based on models, unrelated studies and simplified assumptions. Further, suction dredge miners are willing and able to conduct mercury recover from stream sediments during their operations. All recovered mercury will be properly contained and disposed under hazardous waste regulations. Miner claims are located between sole-source Bohemia mines and the Dorena Reservoir. Suction dredge mercury cleanup operations can facilitate a buffer between reservoir fish and known contaminations from Bohemia Mountain mines. This 2019 Willamette River TMDL singles out and punishes suction dredge miners without justification. Cottage Grove miners love and cherish their heritage and environment. Provide suction dredge miners an opportunity to demonstrate new/improved efforts to capture and remove mercury from operations.

Please consider allowing NPDES 700PM permit until which time stakeholders have completed the Reservoir Management Measures and miners have demonstrated their ability to capture and mitigate any mobile mercury that may be disturbed during small and limited operations.

Thank you for the opportunity to comment. Should you or others have any questions or concerns, please contact me.

Respectfully,
Tasha Lee Webb
Tasha Lee webb

Cc: Senator Floyd Prozanski
Capitol Address: 900 Court St. NE, S-413, Salem, Oregon 97301
District Address: PO Box 11511, Eugene, OR 97440
Email: Sen.FloydProzanski@OregonLegislature.gov
Website: <http://www.oregonlegislature.gov/prozanski>
Representative Cedric Hayden
900 Court St NE, H-492 Salem, OR, 97301
Rep.cedrichayden@oregonlegislature.gov
<http://www.oregonlegislature.gov/hayden>
Peter DeFazio
405 East 8th Ave. #2030, Eugene, OR 97401
<http://www.defazio.house.gov>
DEQ Director Richard Whitman
Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, OR 97232-4100
Office of the Governor
900 Court Street, Suite 254
Salem, OR 97301-4047
Department of Administrative Services
Katy Coba, State Chief Operating Officer and DAS Director
155 Cottage St. NE
Salem 97301-3972
DCBS
350 Winter Street NE
P.O. Box 14480
Salem, OR 97309-0405

03 September 2019

**40. Gary
Stockhoff,
Benton
County,
Oregon**

Andrea Matzke Basin Coordinator

Water Quality Division
Oregon Dept. of Environmental Quality 700 NE Multnomah Street, Suite 600
Portland, OR 97232

Public Works Department 360 SW Avery Avenue Corvallis, Oregon 97333
Phone: 541.766.6821
Fax: 541.766.6891

Subject: Comments regarding the Willamette River Mercury Total Maximum
Daily Load (TMDL) Development

Dear Ms. Matzke,

We are submitting this letter to provide comments on the public review drafts of
the Willamette River Mercury TMDL dated July 3, 2019, and the Technical
Support document dated June 1, 2019.

Lack of County Stakeholders

It does not appear there were any county agencies at the table - at least on the
technical advisory committee. It would have seemed prudent to include county
representatives to ensure their perspectives and challenges were taken into
account. As it is now, the proposed standards include elements that will further
exacerbate financial and personnel challenges faced by Benton County. It also
appears the resources required to be in compliance will produce negligible
positive results. So, a lot of money will be spent for no discernible benefit.
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Section 13.3.1.11

One of our primary concerns with the TMDL is the impacts/conflicts it will create
with our existing NPDES permit. In particular, the extension of the six minimum
stormwater control measures to areas outside those already covered by our permit.
What is the purpose or benefit of extending urban based measures to a rural area?
What non-point source would we need to identify? The make-up of Benton
County is such that our small staffing levels would be stretched even further as
we traverse the county implementing the measures that have very little, if any
benefit.

Section 9.4.2.3

The new TMDL proposes language that will require additional programs that no
longer coincide with the regulatory framework established by NPDES. Each
layer of additional regulations/rules add administrative costs to agency budgets
already constrained. More measuring or monitoring to assess elements that are
practically impossible to measure or monitor will put an undue burden on Benton
County. In particular we are concerned the new tiers for disturbing 1/4 and Yi
acres during construction activities is unmanageable for rural areas.

Illicit Discharge Detection and Elimination

The proposed illicit discharge control measures require the County to develop a program for areas that are rural and very isolated from population centers. Our experience tells us the majority of illicit discharge notifications relate to agricultural operations, and are referred to the Oregon Dept. of Agriculture. Again, developing a program that we have no control regarding enforcement seems ineffective and useless. Not to mention the impact the program will have on strained County resources.

Thank you for the opportunity to provide our comments on the proposed TMDL development. We are fully supportive of reducing mercury loads in the Willamette Basin, but believe these measures will not produce the results we would all hope for.

However, they would result in precious tax dollars being expended on items that are unattainable, which means we can't spend those funds on programs where positive results can be measured. We feel if we are permitted to tailor measures pertinent to Benton County that we would be able to successfully reduce impacts of erosion and mercury loads.

Please feel free to contact me if you have any questions, or if I can be of assistance.

. Stockhoff, PE Public Works Director Benton County

September 3, 2019

**41. Jim James,
Oregon
Small
Woodlands
Association,
Oregon**

Andrea Matzke, Basin Coordinator
Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, Oregon 97232

Re: Willamette Basin Mercury TMDL

Dear Ms. Matzke:

The Oregon Small Woodlands Association (OSWA) represents the interests of Oregon's 70,000 plus family forest owners in Oregon. Many of our members own forestland in the Willamette Basin. Family forest owners own and manage 42% of the private forests in our state. Some of our members also have agricultural activities on a portion of their property. OSWA is proud of Oregon's Forest Practice Laws and Agricultural Water Quality Management Programs that protects water quality for human consumption and wildlife. We support these regulations and believe in their effectiveness in protecting water quality from all forestry and agricultural activities. As you know, compliance with these programs is very high and we will continue to invest in their effectiveness and compliance.

As you also know, forestry and agricultural activities are not the cause of mercury in the Willamette Basin. It is well known that atmospheric deposition of mercury from foreign sources is the dominant source of mercury, responsible for mercury loading. This must be recognized when writing a TMDL to reduce mercury loading in the Willamette Basin. Forestry and agricultural activities are already regulated to protect water quality and are not the cause of any mercury problem in the Willamette Basin.

OSWA has a concern that the TMDL could suggest unwarranted restrictions be placed on forestry and agricultural activities that will have no impact on the amount of mercury in the Willamette Basin, just because Oregon has no control of what foreign counties do. Any such TMDL, that does not recognize the real problem, and places meaningless restrictions on forestry and agricultural activities would be a disaster for forest and farm land owners and detrimental to all the benefits these properties play in Oregon's economy, livelihood, and way of life. Please do not develop such a TMDL.

OSWA also supports the comments from Oregon Forest & Industries Council.

Sincerely,

Jim James
Executive Director
Oregon Small Woodlands Association

September 3, 2019

**42. Therese
Walch,
City of
Eugene,
Oregon**

Andrea Matzke Basin Coordinator
Oregon Department of Environmental Quality 700 NE Multnomah Street, Suite
600
Portland, OR 97232

Sent via email to: WillametteMercuryTMDL@deg.state.or.us

Subject: Comments on the Draft Willamette Basin Mercury Total Maximum Daily Load (TMDL) Dear Ms. Matzke,
The City of Eugene (City) is a NPDES MS4 Phase I permittee and implements its municipal stormwater program within the City's jurisdictional boundaries, an area of approximately 44.3 square miles. The City and Lane County partner on certain stormwater management activities in the 11.2 square mile area outside of Eugene city limits and inside the Eugene urban growth boundary via a stormwater intergovernmental agreement. The City also holds a Water Pollution Control Facility permit for operation of publicly owned underground injection controls. In addition, the City is responsible for day-to-day operations of the regional wastewater treatment plant, also known as the Eugene-Springfield Water Pollution Control Facility and is a partner, along with the City of Springfield and Lane County, in the Metropolitan Wastewater Management Commission.

Eugene is a member of the Oregon Association of Clean Water Agencies (ACWA) and has provided input to the ACWA representatives on DEQ's Willamette Basin Mercury TMDL Advisory Committee since it began meeting in 2017. We appreciate the improvements that DEQ has made to the TMDL documents over time. After reviewing the public review draft TMDL and Water Quality Management Plan, we are in full support of the comments reflected in ACWA's letter to DEQ dated August 29, 2019.

Thank you for your consideration of ACWA's comments. Sincerely,

Therese Walch
Water Resources Manager

cc: Matt Rodrigues, City Engineer, Engineering Division Director
Dave Breitenstein, Wastewater Division Director
Sarah Medary, Public Works Director

**43. Blake
Rowe,
Oregon
Wheat
Growers
League,
Oregon**

Andrea Matzke, Basin Coordinator
Oregon Department of Environmental Quality 700 NE Multnomah Street, Suite
600
Portland, Oregon 97232 WillametteMercuryTMDL@deq.state.or.us

Re: Comments regarding the Revised Willamette Basin Mercury TMDL, Draft
for Public Comment

September 2, 2019 Dear Ms. Matzke:

On behalf of the Oregon Wheat Growers League (OWGL) we write to submit
comments on the Willamette Mercury TMDL. OWGL is the primary
representative for Oregon's wheat growers; working to enhance the profitability
of wheat growers by communicating with and educating growers and the public,
assuring markets, conducting important research, and advocating for sound
business, trade, and environmental policy.

As in initial matter, agriculture and forestry have always been proactive about
protecting water quality on our lands, which are part of the largest land use in the
Willamette Valley. Our state was one of the first to have a robust nonpoint source
pollution program, and our members were proactive in helping to develop and
implement the Agricultural Water Quality Management Program and Forest
Practices Act. Since development of these programs, our sector has invested
millions in studies, on-the-ground work, and compliance with our respective
programs. We will continue to engage to proactively with our programs and to
support public and private investment in water quality improvements on
agricultural and forestry land.

The Willamette Mercury TMDL is clear that our sectors are not the cause of
mercury in the Willamette Basin. Rather, atmospheric deposition of mercury is
the dominant source of mercury from foreign sources is responsible for the
mercury loading in the Willamette Basin. Any air emissions from within Oregon
pale in comparison to the large amount of mercury Oregon receives from foreign
sources. This fact has made writing a TMDL to reduce mercury loading in the
Willamette Basin a nearly impossible task. Although our activities are not the
source of mercury in the Willamette Basin, we will continue to be proactive about
engaging to improve water quality in the Willamette Basin. That said, without
addressing the real cause of mercury exceedances in the Willamette Basin, we are
concerned that this TMDL requests load reductions that are larger than any sector
can manage.

With that in mind, we raise the following concerns with the modeling and load
reductions presented in the Willamette Mercury TMDL.

- Load Allocations are Uncertain because of Modeling - TMDL allocates
daily loads and wasteloads of mercury from nonpoint source areas and point
source dischargers to the

Willamette River system. These loads are based on the results of six separate
computer models that were developed with hotly contested modeling practices.
For example, the use of the Northern Pike Minnow and the chosen
biomagnification factors for input parameters are not scientifically valid. This

layering of uncertain modeling injects significant uncertainty into the load allocations.

- Role of Atmospheric Deposition is Unclear - The TMDL allocations depend on the categorization of different sources (Table 10-1). In this categorization, atmospheric deposition is “double counted” as part of both the “General Nonpoint Source and Background” and as its own separate category. The former appears to be an aggregation of sediment erosion, surface runoff, groundwater, and atmospheric deposition directly to water. However, it is unclear what the second atmospheric deposition category represents, if it is not aerial deposition delivering mercury into the river system from sediment erosion, surface runoff, groundwater, or direct deposition. Moreover, the TMDL generally lacks clarity on atmospheric deposition of mercury and the impact foreign sources of Mercury is having on our waterways. Section 14.2 of the TMDL document states clearly that atmospheric deposition of mercury is the dominant source of mercury reaching Willamette Basin streams and that air emissions from Oregon are small relative to global sources.

- TSS Surrogacy is Questionable – It is unclear from the TMDL if the relationship between the concentrations of TSS and THg is statistically relevant. It remains uncertain whether TSS can truly be measured in place of THg. Moreover, TSS has been ranked as the least preferable of four surrogates analyzed by Tetra Tech. ODEQ must explain why TSS has been chosen as a surrogate rather than other options that have been judged as preferable.

We also incorporate in full the technical comments from the comment letter submitted by the Oregon Farm Bureau, Oregon Forest & Industries Council, and Oregon Association of Nurseries.

Oregon’s farmers and foresters are doing an exceptional job investing in water quality improvements, studying water quality on our lands, and meeting the requirements of our programs, and we will continue to do so after this TMDL is adopted. That said, our technical concerns should be addressed prior to adopting the TMDL. Due to the significant uncertainties in the model, we also hope additional work will be done through the Designated Management Agencies (DMAs) on implementation to assess what is truly possible and necessary within localized areas.

Please keep us updated as implementation moves forward and thank you for the opportunity to comment.

Blake Rowe CEO
Oregon Wheat Growers League

**44. Richard
and Laura
Secord**

TDML : Attention Andrea Matzke, Basin Coordinator

I am writing in regards to the TDML in the Willamette basin, specifically in regards to the Bohemia Mining District suction dredging ban.

I support Bohemia claims owners need for more time to send in research, as your research is inadequate. I strongly encourage you to make sure there is research included that shows the benefits of dredging, to the watershed environment.

Shutting an industry down without adequate research is disgraceful, and I urge you to include unbiased research that will allow a properly educated decision to be made. Specifically, zero samples showing mercury on Sharps or Brice creeks have been acquired. Making your claims entirely false. I will stand with them as they fight and appeal any decision made, if more time and research inclusion is denied.

Bohemia mining district is the oldest and largest mining district in the state. Claim owners livelihoods are at stake. They should have the right to be included in the decision making process.,And be allowed more time than 2 months, to review your claims.

Bohemia mining district is not just about mining. They are a corner stone of the city of Cottage Grove. Oregon history! They fund an outdoor school for young children. They give scholarships to high school graduates. They are behind Bohemia Mining days, an event that includes the entire city. There is also a breakfast on top of the mountain and this year over 800 people attended. They have large forest clean up events. Tours / Caravans. Bohemia mining district is more than dredging. It is the back bone and the culture of an entire city. Our miners give back. Our miners remove 98 percent, or more, of mercury from sediment ran thru their dredges. They remove lead. They keep our forests clean. Mercury is officially classed as a mineral and miners have mineral rights.

I urge you to consider, deeply, the impact of your decision. And I urge you to include claim owners in the Bohemia Mining District in making any decisions. And to allow them an honorable amount of time to understand and research the proposed suction dredging ban. Dorena Lake and Cottage Grove Lake are settling ponds and I heard no mention in your presentation to clean the bottoms of these lakes using commercial dredges. Your studies we read on rendered fish are not accurate. There are mercury and fish studies done in Hawaii on tuna that should help with this study.

Thank you for your time and consideration.

Sincerely, Richard and Laura Secord

cc : Rep. Cedric Hayden, Sen. Floyd Prozanski, Rep. Peter DeFazio, Sen. Ron Wyden

**45. Michael
Eliason,
Association
of Oregon
Counties,
Oregon**

September 3, 2019

Department of Environmental Quality Attn: Andrea Matzke, Basin Coordinator
700 NE Multnomah Street, Suite 600
Portland, Oregon 97232

Dear Andrea,

The Association of Oregon Counties, representing all 36 counties, submits this letter on behalf of the counties in the Willamette Valley that are impacted by the changes to the Willamette Basin Total Maximum Daily Load (TMDL) regulations proposed by the Oregon Department of Environmental Quality (DEQ). For over 100 years, AOC has been working to improve the ability of county government to serve the residents of Oregon by providing a forum for information sharing and consensus development.

The proposed new Willamette Basin TMDL regulations identified by DEQ in the updated Water Quality Management Plan (WQMP) have implications for both urban and rural, large and small municipalities, in the Willamette Valley. Oregon Counties are worried that the lack of resources and data available to identify “non-point source” mercury will prevent them from achieving the reduction benchmarks. Adding regulations, not in alignment with federal permit requirements, will financially strain county governments.

The mercury reduction requirements established in the TMDL primarily target nonpoint source pollution, which typically originates from the atmosphere and settles in the soil. Non-point source pollutants are extremely difficult to identify or measure accurately and are estimated by the WQMP to make up 96% of mercury pollution in our waterways. While there are programs identified to help counties manage non-point source pollutants, the large reduction requirements do not reflect the significant challenges. Both urban and rural communities in the Willamette Valley will be responsible for reducing 88% of current mercury levels from nonpoint sources. Urban counties are also expected to reduce mercury pollutants from identified point sources an additional 75% which only makes up 1% of the overall load.

Counties serve a variety of roles when it comes to protecting the environment and managing pollution while providing necessary maintenance and operation of local infrastructure. The current regulatory requirements set by the federal government provide a framework of manageable steps counties can take to limit their impact on the environment. The proposed TMDL rules will be extremely burdensome for small communities who lack the resources to design and create the type of programs needed to identify and reduce 88% of non-point source mercury pollution. The new requirements are trying to reduce large scale pollution that is beyond the control of local governments to handle alone.

AOC’s concerns are outlined below by section. 13.3.2.2 - NPDES Stormwater Permits

The largest, and most encompassing regulatory framework for counties is the National Pollutant Discharge Elimination System (NPDES) which includes the Municipal Stormwater Program (MS4) that manages the way municipalities

operate stormwater runoff from essential infrastructures such as roads and streets. MS4 permits require regular reporting and analysis to DEQ to protect our natural streams and rivers. Under the new TMDL, NPDES permits up for renewal will need to include mercury minimization efforts for identified point sources within the Stormwater Management Plan. The plan will need to include an evaluation of current mercury reduction programs and a strategy to monitor the effectiveness of future efforts. Collection and measurement practices used to identify mercury pollutants are difficult and uncertain, requiring extensive resources. Both MS4 Phase I and Phase II permit holders will be expected to show their progress toward attaining a 75% reduction benchmark without a firm standard of measurement, increasing the risk of noncompliance.

Additionally, jurisdictions with an MS4 permit become responsible for the non-point source pollutants outside of the MS4 permit boundary. For these areas, the local municipality will need to implement the Six Minimum Control Measures required for non-permitted urban DMA. However, there is no clear definition for "MS4 permit boundary" to identify the areas that fall into this category. The vague requirement creates additional uncertainty and makes it more difficult for local municipalities to comply. The vague boundaries also question the previous condition that a DMA could partner with adjacent municipalities to implement the Six Minimum Control Measures. Whether or not this partnership is still allowed is unclear.

If counties are going to successfully implement the proposed rule, permit boundaries need to be identified.

13.3.1.11.2 Stormwater Management requirements for non-permitted urban DMAs

The new requirement to include communities with less than 10,000 people will expand mercury requirements to local governments not well equipped to identify sources of mercury pollution and implement an extensive reduction program. The WQMP acknowledges the lack of data available to determine the amount of mercury displaced by smaller communities but still imposes new, more strict regulations with difficult reduction benchmarks. For example, tests conducted on road construction projects in Linn County could not detect any amount of mercury in the soil, and yet they would still be required to perform the additional reduction programs under the new rule. Even with this uncertainty, small municipalities (including two additional counties) will be required to reduce mercury loads from nonpoint sources by 75%.

The minimal guidance provided to help small communities identify mercury sources sets up our rural communities for failure. The identified projects for rural communities are broad, expensive, and not easily measured. Even the project management suggestions include staff time and expertise that many small departments don't have.

Counties appreciate DEQ acknowledging the limited resources and extending implementation deadlines for small counties, but the financial strain of creating and adopting a plan within 18 months is still significant.

Counties cannot create and implement a program without a clear means of demonstrating compliance and remain good stewards of public money. There is no way to identify the effectiveness of the proposed projects and the overall benefit to the community.

9.4.2.3 Construction Stormwater Permits

TMDL regulations typically coincide with NPDES requirements since they often overlap and both flow through DEQ who acts as the enforcing agent. The new TMDL would deviate from NPDES for non-permitted, urban DMA's when performing construction activities that would displace soil. Under the proposed TMDL:

1. A local ordinance or similar regulatory authority is needed to provide legal enforcement for illicit discharges.
2. Construction projects that disturb a minimum of ½ acre require an Erosion and Sediment Control Plan.
3. Construction projects that disturb a minimum of ¼ acre require a site-specific, stormwater management approach.

The proposed language will require additional programs that no longer coincide with the regulatory framework established by NPDES. Each layer adds administrative cost and requires reporting on outcomes that are difficult to measure and have high compliance standards.

DEQ needs to realign the proposed rules with the guidance provided by the EPA which allows local governments to create their own implementation strategy for the Six Minimum Control Measures. Also, in accordance with EPA regulations, we request that the additional enforcement tiers for disturbing ¼ or ½ acres during construction activities be removed as they are unmanageable for rural areas and go above and beyond what is required for their urban counterparts.

Summary

The proposed updates to the TMDL will create considerable confusion and hardship for counties, especially the rural communities previously exempted. Counties have to be strategic and pursue programs that are efficient and effective to maximize limited resources and staff capacity. AOC is concerned that the additional requirements added to the TMDL are not feasible for small communities to implement, and that the extensive reduction requirements set counties up for noncompliance. While it is clear that DEQ has considered the challenges that exist in rural communities, the outcomes do not reflect the limitations.

To reiterate:

- Small local governments do not have the resources to create, implement and manage a full mercury reduction program that targets broad, immeasurable sources of mercury.
 - It is unclear where the new requirements for Non-Urban DMA's will apply as there is no clear definition for "MS4 permit boundaries."
-

-
- The proposed Six Minimum Control Measures do not align with federal requirements and require new enforcement strategies in rural areas that typically reside in DEQ and are more strict than urban areas.
 - An 88% reduction goal for non-point sources of mercury without data or a clear means of measurement sets local governments up for noncompliance.
 - Areas with no detectable levels of mercury will still be required to implement costly programs despite not contributing to overall reduction goals.
 - Thank you for the opportunity to submit comments. We hope you take into consideration our concerns and suggestions regarding the proposed changes to the Willamette Basin TMDL regulations.

Regards,

Michael Eliason
Legislative Director, Association of Oregon Counties

September 3, 2019

**46. Paul Kirsch,
G.A. Miller
Drainage
District,
Oregon**

Oregon Department of Environmental Quality Attn: Andrea Matzke, Basin
Coordinator
700 NE Multnomah Street, Suite 600
Portland, OR 97232

Dear Andrea Matzke,

I am writing today on behalf of the G.A. Miller Drainage District #1. As a drainage district we have some great concerns over the new Total Maximum Daily Load allocation and related Water Quality Management Plan for mercury in the Willamette Basin.

The G.A. Miller Drainage District #1 has been in existence since the early 1900s. Our district is made up of around a dozen land owners. We get together once a year, we have a secretary and a president, both volunteer. We are all working farmers and landowners, we have no staff or paid employees. The small amount of funds that we collect every year barely pays for the backhoe that goes through and cleans sections of the drainage ditch every year. Our annual collections are around \$2500.

This district has very specific roles and regulations that we stand behind and work hard to achieve through the year. Our job as a tax funded entity is to keep the drainage ditch (roughly 5 miles of originally hand dug ditch) clean and flowing. To do that we have the ability to go onto people's property (who pay into the district by their taxes), clean the ditch, and pile up the spoils of that cleaning process. The landowners from that point have all of the rest of the responsibility, including spreading the spoils, maintaining the area around the ditch, etc. Our role is specific in nature and has been that way for almost 120 years. Our biggest concern over the new TMDL related to the WQMP is the part where you list responsible persons (RPs). You specifically name "water conveyance entities" which would include our drainage district. Our concern is that this term is a new term that hasn't been clarified in statute.

And also lacks clarity as to what kind of responsibility we are now looking at as a district. The liability put on our district in this situation is a very real concern for us, putting us in a very bad position; asking us to be responsible for something that we legally are not even allowed to be doing under current law.

Our next concern is over the implementation plan that will be required by DEQ on an annual basis. Not only do we not have staff, but we don't have the means to hire someone to do this work for us. Also beyond that ,the list of strategies for water quality protection management, lists items that we as a drainage district have absolutely no control over. We have no control or rights to work with stabilization of the banks, we have no funds to conduct outreach and education, we have no staff to monitor and evaluate best management practices, and the list goes on and on.

We do not believe that our actions as a drainage district have any impact on mercury in the Willamette system, nor do we believe you should be requiring small districts made up of individual farmers to put together and implement costly water quality plans when our farmer members have been working with ODA under the Agriculture Water Quality Management Program for years. Before moving forward with this plan you have to take into account the impossible situation you are placing our drainage district in. We are hardworking farmers who want to be able to farm our land like we have for nearly 120 years, this burden that you are placing on our seemingly small, yet crucial part of our operations here in this area is uncalled for and needs to be looked at again for another solution.

Thank you for your time and consideration of this important issue.

Sincerely,
G.A. Miller Drainage District

**47. Clark
Niewendorp,
Oregon**

Clark Niewendorp
9605 SW Killarney Ln.
Tualatin, OR 97062
503.860.7774

Comments on the Willamette Basin Mercury Total Maximum Daily Load (TMDL) and Associated Water Quality Management Plan: 700-PM Suction Dredge Mining

Basin Coordinator,

I am writing to express my views on the pending revised TDML (Brannan and others, 2019) in the Willamette basin, specifically the proposed suction dredging prohibition in the Upper Row River Watershed (URRW). Unfortunately I begin with the view of "Alea iacta est." But I hope I'm wrong. Nonetheless, I want my opinion heard and my views considered in the battle to save gold dredge mining in the URRW.

The proposed state prohibition on suction dredge mining, which is a change incorporated into the 2020 reissuance of the 700PM permits for the URRW should be set aside.

The die was cast actually in April 2017 by a US District Court ruling that required EPA (U.S. Environmental Protection Agency) and Oregon Department of Environmental Quality's (DEQ) to revise the existing 2006 mercury (Hg) TMDL; this ruling as amended stipulates the adoption of a revised TMDL and action by EPA on or before November 30, 2019. Efforts spent to comply with the rulings has already involved high costs, devotion of considerable agency resources, large legal fees, and endless argument and regulatory conflicts. Plus add the burden of new regulatory standards (1) Oregon's new criterion for fish tissue, concentrations of 0.040 mg/kg (wet weight) MeHg and (2) water column standards of 2.4 ug/L (acute) and 0.012 ug/l (chronic) total mercury (THg) (equivalent to 12 ng/L). All of this together pushes the envelope and as a result attainment of the mercury criterion will not happen despites DEQ's rather hopeful implementation strategies.

At the core of this boondoggle is the revised TMDL along with a separate document called the Mercury TMDL Development for the Willamette River Basin (Oregon) - Technical Support Document (TSD) (Public Review Draft) (Butcher and others, 2019). The TSD was prepared by Tetra Tech, a watershed contractor for the EPA. The TSD describes a "...simplified conceptual framework [a desktop modeling effort]..." where "...the long-term average MeHg concentration in the water column depends on [total mercury] THg concentrations in the sediment, which in turn depend on rates of THg loading from upstream. The complex transformations between different forms of mercury are not explicitly simulated; rather, they are approximated by an empirical relationship between observed MeHg and THg in the water column..." (1.1 Problem Definition on p. 7). This is an arithmetic exercise that tries to predict the future.

After reading the revised TMDL, which is quoted accordingly below, a rather pointless management goal is related to the Legacy Metals Mining Sector. DEQ thinks a 95 percent reduction g total mercury/day from this sector can be achieved

by two management approaches. The agency deems the remediation work at the Black Butte Hg Mine area as being capable of meeting most of this reduction. I'll say more about that later.

DEQ then unilaterally decided that the "last little bit" of the reduction will be credited to the ban on suction dredge mining in the URRW. According to DEQ, dredging "... adds an unquantified [emphasize] but direct source contribution to the loads, which are a function of concentration and flows, collected behind reservoirs." (revised TMDL, p. 57-109) And then says, "[i]n the case of mining, specifically, the relative contribution is low [mercury reduction potential], but the sources are discrete and isolated and there is a high potential for reduction upon remediation. Therefore, legacy metals mining received a very high reduction requirement." (revised TMDL, p. 64-170) Then why was the remediation completed at the Champion Mine not considered as that "last little bit" thereby satisfying the mercury reduction potential? I am referring to the U.S. Forest Service's treatment of contaminated material at the 1200 level/mill.

Whether there is a "bright light" here for DEQ and both of the above management approaches work—highly doubtful—won't be known without DEQ implementing a long-term monitoring program. Is there going to be a monitoring program that gauges the success or failure of those management goals with well-defined performance milestones, monitoring strategies, and evaluation criteria? Please don't tell me that a TSS surrogate for mercury will be used for evaluating effectiveness and thus a monitoring program based on the surrogate.

There are five items below pertaining to the public practice of geology/engineering, public involvement, DMA permit renewal, the peer review process, and data accessibility that need to be properly considered and addressed. The five items include:

1. Both documents, the revised TDML and TSD, employ the public practice of geology and-or engineering; and therefore, each document when finalized must be signed and sealed by either a registered Geologist, Certified Engineering Geologist, or Engineer (PE) in the State of Oregon.
2. I find DEQ's failure early-on to establish a collaborative and participative approach with local dredge miners (stakeholders), mining associations, or affiliated groups highly contentious. Instead, DEQ invited representatives from Federal, State, and local agencies, along with members of existing professional organizations and Tribes, to participate on an advisory committee. The committee provided input and feedback on the data and information used in the development of the revised TMDL, as well as on the approaches to implement the Willamette Basin Mercury TMDL (DEQa, 2019; p. 2 of 9). DEQ did not ensure that all interested parties would be heard. Who made the decision to exclude the above mentioned stakeholders and did DEQ have a reason?
3. Pity the DMAs (Designated Management Agencies) responsible for compliance with the new regulatory standards previously mentioned. The compliance outcome will be anyone's guess. DEQ will continue having communication and meetings with those public and private entities regarding water quality compliance, THg allocations, measurable Hg reduction objectives, and Hg's remedial implementation actions. But not one of the DMAs' ("...approximately 46 districts, associations, and other public and private entities identified as potentially managing surface water conveyance systems..." (DEQa,

2019, p. 7-9)) in the WRB face a proposed permit renewal problem—one that might very well prohibit a DMA's existence or operation. Instead, DEQ might impose a fine whenever. Why is this?

4. Establishing and demonstrating the reliability and credibility of the peer review process is in itself crucial. For the revised TMDL and the TSD, how did the review process work, e.g., how was the review(s) conducted (in house or outside) and who conducted the reviews?

5. What was vexing and hampered my review was the inability to access "...[DEQ's or its contractors'] data collected since development of the 2006 TMDL...[DEQa, 2019, p. 3 of 9]" Tetra Tech confirms it used a comprehensive database (Microsoft Excel™ workbooks) referenced in 2.1 Mercury Database Development, p. 11. "Available data were compiled into a comprehensive database consisting of Microsoft Excel™ workbooks"..." The resulting database files are available electronically [p. 11]." Where are these data, data sets, and-or databases? I also see in Table 2-1 (2.0 Data Sources, p. 11) three Excel™ spreadsheets with sediment data referenced therein. What about them—availability?

I resorted to the following data sources for my review:

- Georeference sample location maps from Hygelund and others (2001) and Amber and Hydellund (2001).
- Marcy K., 2005, Preliminary assessment/site inspection, upper Row River watershed, Lane County, Oregon: U.S. Environmental Protection Agency (EPA) Preliminary Assessment/Site Inspection Report TDD:04-04-0008, 73 p. <https://www.deq.state.or.us/Webdocs/Controls/Output/PdfHandler.ashx?p=cd56bab5-f5b0-4d4e-b225-718516e32676pdf&s=EPA%20PA-SI%20rpt.,%20Dec,%202005.pdf>
- NGS, 2016, National Geochemical Database: Sediment: U.S. Geological Survey. <https://mrdata.usgs.gov/ngdb/sediment/>
- NGDB, 2008, National Geochemical Database: Rock: U.S. Geological Survey. <https://mrdata.usgs.gov/ngdb/rock/>

A realistic assessment of the TSD's modeling requires not merely an appreciation of its advantages but a pragmatic consideration of the modeling's downside limitations as well. The modeling was an integration of three models: a Watershed/Mass Balance Model, a Food Web Model, and a Mercury Translator. As mentioned earlier on, modeling like what we have is a simplification of complex environmental processes that is stirred up with some arithmetic, and it starts being, or becoming, the "truth of the matter." Thus downside limitation is glossed over with a brief disclaimer. Having said that it is hardly surprising, then, that I bring up the question of uncertainty. Below are some relevant examples:

- An example of a weak comparison is found in the TSD, 5.3.3 Groundwater Loading, p. 79. Here the modelers had to look as far away as Wisconsin, Minnesota, and New Jersey Coastal Plain for groundwater loading data. One ng/l was picked because..."[it] appeared to provide reasonable results in mass balance calculations." (p. 79). Here the comparison to the Willamette Basin is flimsy at best, not to mention the possibility of biased input data.
- A glaring example of a model's downside is stated on p. 112 in the TSD, 5.4.3 Reservoir Processes. "For the other major reservoirs, there are no available data on THg concentrations in outflow, and only fish tissue data are available for mercury within the reservoirs. While there are mining sources upstream of several

of these reservoirs, most of the mines were relatively small and did not produce large quantities of mercury. Examination of the limited data from Dorena Lake reveals that the upstream influent concentration of THg (1.78 ng/L, n=4) and within the lake (1.90 ng/L, n=4) are nearly identical to the downstream concentration of 1.84 ng/L. These observations suggest that processes within Dorena Lake have a minimal effect on the concentration of THg transported downstream, although a reduction in load proportional to evaporative losses likely occurs. Therefore, although this conclusion is based on a limited dataset, we assume that reservoirs are not sources of THg in the Mass Balance Model. Nevertheless, reservoir operations will change the timing of THg load delivery and likely result in some increase in the MeHg load due to methylation in reservoir sediments. Therefore, lacking other data, we assume that the effect of the remaining reservoirs on THg transport is accounted for in the instream modeling component (Section 5.4.2); travel times through the reservoirs (derived from the HSPF model) are longer than free-flowing reaches, and losses associated with increased travel time are represented by the exponential decay model."

In the paragraph above, the question of methylation in reservoir sediments from reservoir management processes and thus fish tissue concentrations has been marginalized—this is a modeling bias. The legacy metal mining is not entirely to blame for the loading associated with reservoir sediments. According to Ambers (2001), sediment yield of the entire URRW is 108 tons/km²/year of which the sediment yield from mining lands is but a portion. The literature is contradictory, too. According to Eckley and others (2017), reservoirs to begin with typically have elevated fish mercury (MeHg) levels compared to natural lakes and rivers. They reference six articles that say, "Reservoirs have been shown to have elevated MeHg concentrations in water and fish compared to natural lakes and is related to the degree of water-level fluctuations. They also reference two other articles that contend ongoing seasonal water-level fluctuations continue to elevate MeHg levels. In addition, Eckley and others (2017) concluded that, "Overall, our results suggest that reservoir management [in the case of Cottage Grove Reservoir and by extension to the Dorena Reservoir] actions can have an impact on the sediment-porewater characteristics that affect MeHg [methylmercury] production."

Dorena Lake has two seasonal pool levels: a low pool (summer) and normal or full pool (winter). The difference in area between the two pool levels looks to be well over 50 percent (Ambers, 2001; Ambers and others, 2001). According to Eagles-Smith and others (2016) citing others, fish MeHg concentrations directly correlate with cyclical soil drying and rewetting and the associated changes in redox conditions. So I am not clear why those physical, chemical, and biological processes have been discounted. Please explain why. Also, quantify the methylation.

- An example of too few samples, a strong bias, is found in the TSD, 5.3.4 Mining Sources and 5.4.3 section. The data for estimating the THg load upstream and downstream of Dorena Lake relies on four records respectively, which I presume represents one sampling event at each. Right? Taking this questioning further, please clarify for me what was the sampling protocol at all of those sampling sites. I am particularly interested in learning whether or not the stream-sediments were sampled from the creek bottom or from saturated or dry sediments from either the bank, gravel bar, or terrace. Also, are the same four

samples in the BMD used for the statistical regressions of THg concentration against flow used to estimate the "outflow" load from Cottage Grove Reservoir and Dorena Lake Reservoir of 0.40 kg/yr and 0.36 kg/yr THg?

- An example where an explanation of data accuracy and correctness is needed is found on page 5 in the TSD, 5.4.1 Estimates of Riverine Loads. "Loads of pollutants in streams and rivers are difficult to estimate because concentration is usually observed only sporadically and measurements of both flow and concentration are required. Because concentration is often strongly correlated to flow it is not sufficient to simply combine average concentration with continuous flow."

- The modelers paired the loading of THg from the BMD with daily flow estimates from a HSPF model simulation (Hydrologic Simulation Program - FORTRAN) and estimated 0.12 kg/yr THg. Correct me if I am wrong, but data for this estimation were not included in Tetra Tech's document and the HSPF modeling's parameters were not provided either. Is that correct? By the way, where are the sampling points for this pairing located?

- The estimated THg concentration in outflow is based on the "mean" of the four water samples downstream of Dorena Lake and is 1.84 ug/l. When this concentration is combined with flow records for 2002-2017 (5 yrs) the estimated annual average THg load is 1.15 kg/yr THg. I would like to see the math for this ug/l to kg/yr conversion. Why couldn't DEQ just simply sample the spillway or the dam's various outlets for that information? Notwithstanding, if any of the sampling downstream of Dorena Lake occurred below the confluence of Mosby Creek with the Row River and-or below the confluence of the Row River with the Coastal Fork of the Willamette River, then those THg concentrations reflect separate THg loads from multiple sources and the data (all or part) are not representative of the outflow from Dorena Lake. Where are the locations for the sampling downstream of Dorena Lake?

- In the TSD on p. 7, 1.1 Problem Definition there is this statement, "[w]ithin a river, MeHg production mostly occurs within the sediment, with the quiescent water of backwater channels potentially having higher rates of methylation." Where are these backwater channels in the URRW?

- In the TSD on p. 109, 5.4.3 Reservoir Processes, the following statement makes one infer there's a link related to Hg amalgamation but proof is lacking—where is the direct evidence? Are there slickens if so where? Has DEQ—or anyone—found quicksilver droplets? "The Bohemia Mining District, where mercury amalgamation was used to recover fine gold particles, drains to Row River, a tributary to Dorena Lake."

- The job of the Dorena Lake Dam and Cottage Grove Dam is to control floods, and to do so the lake level is highly managed with regard to the timing and amount of water it receives and releases. This type of management has not changed since the US Army Corps of Engineers completed the dam's construction in 1949. I have two questions below related to the dam's management and MeHg concentrations:

1. Will ODEQ impose fines on the US Army Corp of Engineers (as a DMA) in the event it fails to manage lake water levels at Dorena and Cottage Grove Reservoirs, i.e., maintain a full reservoir pool-level, so that seasonal drying of lake sediments and subsequent methylation is abated? A rhetorical question!

2. Dorena and Cottage Grove dams are both an earthfill structure (each at least a kilometer long) with a concrete spillway. Where did the US Corp of Engineers acquire the fill used to construct the earthfill portion at both dams? The

point of this question is to rule-out the source of this earthfill somehow related to mercury mine waste and-or BMD tailings-waste.

Below I'd like to provide a geologic and geochemical argument that supports my view that the proposed dredging ban in the URRW is unnecessary. That is followed by clarification for content in DEQ's (2019a) memorandum and I also want to tag some inconsistencies in the TSD's Table 5-7, 5.3.4 Mining Sources, p. 82-85.

1. First and foremost DEQ is only half right if it says the effects of the legacy metal mining mercury contamination is apparent in the observed data for the Coast Fork. No one including Hygelund and others (2001) and Ambers and Hygelund (2001) have linked mercury contamination from mining sources to elevated mercury in fish tissue in Dorena Lake. What can be said with certainty is that there is THg in the stream-sediment where the material was sampled, the THg concentrations are variable from one spot to another, measurements apply to specific spots in the URRW, and Dorena Lake has some fish with elevated mercury levels. Those two studies are classic examples of academic grab, bag, and run to lab research. And the interpretations that result do not necessarily take into account important and often contradictory field observations.

2. Count me as a skeptic but I don't think the remediation work at the Black Butte Mine area matters all that much, thanks to:

a. The possibility of other unknown Hg-bearing veins in the tributaries that empty into Cottage Grove Lake.

b. Mineralized rock that still remains in the Black Butte Mine area—not all was relocated—together with impacted soils in the mine area and elsewhere where soils overlie patches of acid altered rocks.

c. The presence of furnace slag used as road-bed material in order to build/repair the road to the mine (Hardin, 1909).

d. The existence of two other Hg prospects with surface disturbance.

e. Hobart Butte is associated with strongly altered rocks (Peck and others, 1964), Hg there is 0.02 to 161 ppm (parts per million) (NGDB, 2008). This butte lies about halfway between the Black Butte Mine area and the Cottage Grove Lake.

f. A little south of the Black Butte Mine area is the Scorpion Prospect. This undisturbed prospect is centered on a 1.4 mi (2.2 km) long by 1,300 ft (400 m) wide area of strongly acid altered volcanic rock containing Au mineralized zones (Mawson, 2019). The range of Hg values for rocks in the vicinity of the Scorpion Prospect is 0.09 ppm to 25 ppm (NGDB, 2008). The close association of the Scorpion Prospect with the Black Butte Mine area poses an interesting question because of their proximity. A much larger area of alteration/mineralization is present than previously thought.

g. A vein sampled at the Cinnabar (or Bald Butte) prospect and an outcrop near the Sullivan prospect contain respectively Hg at 76 ppm and 130 ppm (NGDB, 2008).

3. The shape of the entire Bohemia Mining District is roughly triangular, depending on your imagination. Based on distribution of mines and prospects, the district's length is 8 mi (12.9 km) SW-NE and 6 mi (9.6 km) SE-NW (Niewendorp and Geitgey, 2008 augmented with DOGAMI's lidar). The northern part of the Bohemia Mining District (N-BMD), which is about one-half of the district lies within the URRW. To the south, the Steamboat Creek watershed covers the other half.

4. Four separate areas of strongly acid altered volcanic rocks with mineralization, except for one, lie within the Coast Fork Willamette subbasin (HUC 8, 1709002), from east to west, they are: the N-BMD, the Walker Creek Prospect on the adjacent Holderman Mountain, the Black Butte Mine area-Scorpion Prospect, and Hobart Butte. The Walker Creek Prospect is directly comparable with the alteration/mineralization in N-BMD and possibly a westward extension of the district as well.

5. An important temporal point about the Cottage Grove and Dorena Lake reservoirs is the fact that both were constructed about 50 years ago (ca 1949). Never mind the two dams were important historical changes on the landscape. Dorena Lake was constructed nearly 30 years after the end of Bohemia's mining boom. This circumstance has an important implication. The THg-MeHg data collected from the reservoir, as well as the data for the URRW above it, cannot be attributed entirely to past legacy metal mining. Today you have to consider other possibilities for the THg problem in Dorena Lake. For instance, sediment yields influenced by commercial logging involving clear-cuts, selective cutting, and splash dams (Ambers, 2001; Halupa, 2001). The watershed above Dorena Lake (i.e., the URRW) covers 265 mi² (686 km²) and the majority of it is forest lands (Ambers, 2001).

6. Except for intermittent small-scale dredging activity, I am not aware of any other forms of mining underway in the N-BMD. Suction dredge mining is not a new or increased discharge there.

The legacy metal mining mercury sources are two-fold: a direct source such as the use of quicksilver and indirectly through an alteration/mineralization's dispersive halo of THg. In other words, the quicksilver use in the N-BMD isn't the entire environmentally related source of the problem. The naturally elevated Hg background (NEHB) levels that overlies the N-BMD, in my opinion, continues to contribute more THg to the soils and water than the quicksilver sources mentioned in Table 1 and 2 below.

As an example, the source for NEHBs consider that there are 178-plus veins cast over the N-BMD (Lutton, 1962), not to mention the pervasive acid rock alteration extending beyond the vein system. Lutton's dissertation area did not cover the western-most part of the BMD nor did his mapping extend north past Cat Creek. Overlain on the URRW's landscape beyond those areas are many-many more unmapped veins, as, for example, the respective veins at the Golden Star Mine and the one exposed in a road cut exposure and below the bridge crossing Brice Creek at the trailhead of the Brice Creek Trail.

In the URRW, what I want show in the case examples below is the dispersion of Hg from a halo that covers areas of alteration/mineralization. NEHB levels in the soil and rock that overlies the N-BMD and other prospects is a salient factor and the THg problem is not solely about Hg amalgam from legacy metal mining activities.

The following are observations pertaining to the standard and-or normal THg background ranges in the N-BMD and URRW for both rocks and stream-sediments:

7. First and foremost, such information is limited—I used the information found in the following three data sources: Amber and Hygelund (2001), Marcy (2005), and NGDB (2008).

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8. Background Hg concentrations for rocks unaffected by alteration and-or mineralization in the N-BMD consists of two samples:
 - a. A sample of the "country rock" in the N-BMD collected by Marcy (2005). This sample is one found next to or part of a zone pervasively altered by hydrothermal solution and contained a Hg level of 0.1 ppm.
 - b. A sample of a rock collected from a road cut exposure along Hardscrabble Road. This sample contained a THg level of 0.29 ppm (NGDB, 2008).
 - c. For stream-sediments, the reported THg background levels are as follows:
 - i. Amber and Hygelund (2001) reported a THg background of 0.066 ppm.
 - ii. Marcy's (2005) suggests the THg background is 0.08 to 0.9 ppm.
 - iii. In NGS's (2016) data set the THg background levels are consistent but slightly lower, in the range of 0.02 to 0.07 ppm.

Keeping the above background ranges in mind, below are additional observations that illustrate the nature of NEHB levels associated with a dispersive geochemical halo overlying the N-BMD and the adjacent Walker Creek Prospect. Weathering of the geochemical dispersion halo that cover these areas, whether it be chemical or physical releases mineral and chemical Hg to soils. Then the dispersion of the Hg from that media depends on topography and the process of erosion and thereby THg becomes incorporated into the train of stream-sediments. Case examples in the URRW where there appears to be a THg dispersion train is listed below:

- In the N-BMD, the Hg concentration for rock samples collected from vein associated alteration and mineralization range from 0.1 to 2.86 ppm (Marcy, 2005).
 - A geochemical survey on Holderman Mountain to the west of the N-BMD, but still in the URRW (Walker Creek), found there similar Hg levels ranging from 0.05 ppm to 2.7 ppm (NGDB, 2008). Holderman Mountain is partly overlain by the undisturbed Walker Creek Prospect, the shape of which is elongated 2.5 mi (4 km) long (SW-NE) by 1.2 mi (1.9 km) wide (SE-NW). According to Mawson (2019), this prospect is related to a Au deposit that overlies an area containing adularia associated low sulphidation gold mineralization and corresponding Ag, Hg, and Sb.
 - A possible THg dispersion train may be reflected in the distribution of THg in the stream-sediments along Laying Creek (and up some tributaries). The range of THg values is from background levels (0.029 ppm) to NEHB levels (0.146 ppm) (Hyelund and others, 2001).
 - The relatively undisturbed Pitcher (Hg) Prospect lies up in the drainage of Pitcher Creek. The stream-sediment sample at the mouth of Pitcher Creek has a THg level of 0.15 ppm (Marcy, 2005) likely related to the Hg prospects up the creek's drainage.
 - Outside of the URRW is Mosby Creek that stands-out as another example case. The watershed for Mosby Creek is between and parallel to the watershed containing the Black Butte Mine area to the west and the URRW's eastern boundary. There is a lone stream-sediment sampling site along Mosby Creek about midway between its headwater and the creek's confluence with the Row River. The THg concentration there is 0.33 ppm (NGS, 2016); that is unexpected. Four possibilities might account for the presence of the elevated Hg therein:
 - a. The dispersion of Hg from the Walker Creek Prospect mentioned above.
-

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- b. Although conjectural, a portion of the Black Butte Mineral area could extend eastward into the Mosby Creek's watershed.
- c. The presences of unknown veining and-or deposits, as, for example, the native copper locale (DOGAMI, 1951) downstream of the sampling point near the confluence of Mosby Creek and the Row River.
- d. Or, there is no association with rock alteration/mineralization and the THg in the stream-sediment is "what it is" and nothing more.

A clarification for content in DEQ's (2019a) memorandum, inconsistencies in the TSD's Table 5-7, 5.3.4 Mining Sources, p. 82-85, and additional mining details is presented below.

According to DEQ's (2019a) memorandum, "[w]ithin the Willamette Basin [WRB], there are five abandoned mercury mines, seven mercury prospects (where no extraction or production yet has taken place) and five [mining] districts focused on gold [Au] mining [p. 6 of 9]." No, I believe there are only three abandoned Hg mines (Black Butte Mine, Kiggens Mine, and the Nesbit Mine), each have reported production (i.e., flasks of mercury). At least seven Hg prospects exist, possibly nine (Niewendorp and Geitgey, 2008).

Also, if you count the so-called Winberry District, then yes, there are five mining districts focused on prospecting-mining for gold (DEQ, 2019). Otherwise, I count four districts, from south to north, they are the Bohemia, Fall Creek, Blue River, and Quartzville. Farther north beyond Quartzville is the North Santiam Mining District; base metals were prospected-mined there.

In the TSD's Table 5-7, 5.3.4 Mining Sources, p. 82-85, I noted the following three inconsistency:

- The Noonday Mine is not in the Coast Fork Willamette River Subbasin and not in the URRW.
- Sharps Creek is the watershed for the Star Mine and Sweepstakes [Mine].
- Graham Property was developed for Au/Ag by 3 short prospect adits (DOGAMI 1951), not for Hg, and should be removed from the Table.

Am I correct to think the reason for listing the mines in Table 5-7 was based on workings <1,000 feet long? If not, please clarify.

In the URRW, seven stamp mills and an Arrastre milled gold ore; the gold being free milling and easily saved by amalgamation (Table 1). These mills operated intermittently from 1895 to 1910 (Taber, 1949), but the larger mills, the Champion and Vesuvius, continued intermittently up 1922-1923. Bohemia's period of greatest production of gold and other minerals was 1889 to 1906 (Halupa, 2001). However, by 1910, the free-gold in most of the veins throughout the district was depleted, ending the area's mining boom (Taber, 1949).

The following mills in Table 1 below varied in size from 2 heads of stamps to 30 heads of stamps. All material from those mills, subject to screening of oversize, passed over an amalgamation table for gold recovery. Historical newspaper accounts indicate continuous milling for 30 days (night and day) was not uncommon. The use of quicksilver intermittently spanned 25-plus years, not 60-

plus years as Halupa (2001) has indicated, and this milling preceded Dorena Lake's constructed by about the same time span.

Table 1. Stamp Mills in the URRW*; information sources: DOGAMI (1951), DEQ (2019b,c), Marcy (2005).

Mine/Mill**	Stamp Mill (Hammers)	Period of Stamp Mill Operation	Drainage Sub-Basin	Notes
Champion Mining and Milling	10 to 30	1895-1910, 1922(?)	Brice Creek	10-stamp mill at confluence of Day & Champion Creeks (1895-1902; Champion property). Three batteries of 10-stamps setup side-by-side, operated on the property from 1902 to 1908 (largest mill in the district (two 10 stamp mills relocated from Musick and Helena mines). Gravity separation followed until 1922 when mining stopped. A 100-ton per day flotation mill built in 1935 and operated from 1939 to 1942. USFS lands were 1,000 cubic yards of tailings & 10,000 to 15,000 cubic yards of waste rock-approx 14 acres of disturbed land.
Vesuvius Mining and Milling (includes Starks-Harlow Vein, Wild Hog, and German tunnels)	10	1895 to 1902; Intermittently from 1902 to 1923	Sharps Creek	From 1895 to 1902, a 5-stamp mill operated at the German Tunnel and a second 5-stamp mill operated during the same period at the Starks-Harlow Vein mine. Only one 5-stamp mill operated intermittently until 1923. Approximately 200 cubic yards of waste rock in front of the German Tunnel and a 100 ft high by 150 ft wide tailings pile west of the Wild Hog Tunnel-extends into the creek. No assessment report
(Golden) Star Mine	5		Sharps Creek	Operated a mill for a time before 1898 (Diller and Knowlton, 1900)
Sweepstakes Mine	2	1909 to 1910	Sharps Creek	Small production (DOGAMI, 1951)
Stamp mill on Sharps Creek	?	?	Sharps Creek	Mill near mouth of Martin Creek (Diller and Knowlton, 1900)
Walker's Arrastre Mill	na	?	Sharps Creek	On Sharps Creek further downstream from the stamp mill near Martin Creek (Diller and Knowlton, 1900)
Crystal Mine (Lead Crystal, Crystal Consolidated, El Calada property)	2 to 5	? to 1919?	Brice Creek	2-stamp mill; 5-stamp mill in 1919-operated briefly. Includes the Lizzie Bullock Claim (DOGAMI, 1951)
Walton Creek Prospect	3		Sharps Creek	Tremaine mill, largely handmade, operated by water power. Very limited operation.

* Period of operation for the above mentioned mills differ from Amber and Hygelund (2001), who they attributed to Honey (1980).

**Sultana's Chilean mill was not included—gold recovery used a foliation/wiffley table setup; it is unknown whether an amalgamation step was involved.

In the URRW, there is limited data characterizing tailings and mine waste in terms of volume and aerial extent (DEQ, 2019a; DEQ, 2019b; DOGAMI, 1951; Marcy, 2005) and Hg concentration (Marcy, 2005). The data available are summarized in Table 2 below. Did DEQ use any of the information below in the spreadsheet for calculating allocations (revised TDML, p. 142-169, Table B-1.)

Table 2. Location of tailings and mine waste piles.

Mine	Sample Location	Hg Concentration (mg/kg)	Tailings (t) or Waste (w) Volume (cy)*
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Vesuvius Mine (DEQ, 2019b)	Wild Hog adit, German adit, and Stock-Harlow vein	5.1, 12.1, 0.14	Wild Hog: ~11,000 (t)	
	German:	200 (w)		
	Stock-Harlow:	?		
Champion Mine (DEQ, 2019c)	Tailings Pile & Waste Rock Dump			9.4
		1,000 (t), 10,000 to 15,000 (w)		
(Golden) Star Mine	Waste Rock Dump(?)	0.21	200 (w)	
Combination Mine	Waste Rock Dump	0.14	50 (w)	
Sultana Mine	Tailings Pile	25.1	200 (w?)	
Sweepstakes Mine	Waste Rock Dump	14.6	900 (w)	
Graham Property	Waste Rock Dump	5.1	200 (w)	

* Unless noted otherwise the volume (cy) for tailings and waste is from Marcy (2005).

The following observations are offered for consideration regarding the size and scope of historic placer mining in the N-BMD:

- Historical information for placer mining in the URRW is scant. It may very well be limited to the two sources below:
 1. According to Hoyer (2003) "...many placer workings were producing gold for the economy...A hydraulic placer system was installed in Sharp's creek at Glenwood station...[a] monitor with a high power water nozzle was used to wash the gold deposits from the streambed and the embankments." According to DOGAMI (1951), this place mine is centered about 400 ft (123 m) downstream of the Sailor Gulch tributary where placer miners displaced gravels with a three-inch nozzle under hydraulic pressure from a 15 ft head drop. The width of Sharps Creek at the mine was about 40 feet wide and the gravels were 10 ft (3.3 m) thick.
 2. An online search of historic Oregon newspapers (<https://oregonnews.uoregon.edu/>) found two accounts of placer mining in the URRW. One indicated placer mining was active at the Red Bridge on the Row River and two other properties on Sharps Creek (Bohemia Nugget, June 12, 1903). The second mentioned the Sharps Creek placer miners made from \$2 to \$3 per day using crude equipment (Cottage Grove Leader, July 18, 1911).
- The placer mining operations weren't that big to begin with, including the hydraulic mine footprint of the Sailor Gulch Placer which is unrecognizable based on lidar.
- Relic stacked piles of river boulders, mounds, and pits left behind from placer mining activities don't showing up on the lidar either.
- No one has reported the presence of relic fine-grained sediment or "slickens" layers from either historical placer mining operations or stamp milling.
- The geometry of and topography within Sharps Creek, Brice Creek, and Champion Creek do not lend itself to large-scale placer mining.

Conclusions

The THg loading in Dorena Lake is related to two sources (1) a NEHB source and (2) the more important source—the sediment load from commercial logging involving clear-cuts, selective cutting, and splash dams (Ambers, 2001; Halupa, 2001). While quicksilver was almost certainly lost to the environment from historic placer and lode mining in the N-BMD, evidence is lacking to think that tens of thousands of pounds of Hg were lost to the environment. The size and scope of the stamping and placering in the N-BMD says that didn't happen, nor has there been reported quicksilver droplets or amalgam in the stream-sediments,

in bedrock depressions and fractures, or on bedrock either from the historic placer mining, or, for that matter, from the stamp mills.

My Recommendations

1. Run the models again on the scale of the HUC-6th level and this time consider alternatives for the source assessment of aggregated nonpoint sources. Modeling processes on a HUC-8 scale is far too coarse and over simplifies complex-multi related processes, as, for example, in the URRW, legacy metal mining at specific areas is not the only source of THg of THg, it's also from so called "nonpoint sources" of atmospheric deposition, sediment erosion from other land uses such as forestry, and let me add another category, NEHB source(s). Factors from those sources were not considered together for the THg-MeHg loading of Dorena Lake.
2. Quantify or qualify the THg loading from legacy metal mining in the URRW using the observations provided herein.
3. Answer these questions with a through lidar analysis:
 - o What is the volume and area of stream-sediment in the URRW? You can use lidar to help produce that information as well as map various fluvial features.
 - o What is the volume of waste rock piles in the N-BMD? You should consider waste rock piles for non-producing mines and prospects—those without a mill—as representing part of the NEHB dispersion halo overlying the N-BMD.
4. What is the estimate of the amount of mercury (quicksilver) in pounds used as amalgam during the operation of the eight historic stamp mills listed in Table 1 and guided by the information contained in Table 2?
5. Is the THg that escaped to the tailings heterogeneously distributed and how far downstream has it dispersed?
6. DEQ needs to put together and institutes a dredging study of its own design in and for the N-BMD/URRW, and from which representative THg loading information is gathered. The agency is using proxy studies in Oregon, California, Nevada, Wisconsin and Florida (Brighman and others, 2009; Fleck and others, 2010; Marvin-DiPasquale and others, 2010) to argue how suction dredging disturbs THg in stream beds and produces methylation. But these studies have very little relevance to the sediment transport parameters in the URRW, which haven't been characterized. The correlation of dredging's disturbance, as, for example, in the Yuba River (Fleck and others, 2010; Marvin-DiPasquale and others, 2010), where Hg permeates the sediment as the result of numerous and large hydraulic mine sites, to dredging in the URRW is grossly disproportionate.
7. Stop geo-environmental managing human activity by modeling. If not, then at least calibrate the models with pertinent data presented herein.

References used in the text and those consulted

Amber, R.K.R., 2001, Using the sediment record in a western Oregon flood-control reservoir to assess the influence of storm history and logging on sediment yield: *Journal of Hydrology*, v. 244, p. 181-200.
https://www.wou.edu/las/phyci/taylor/andrews_forest/refs/ambers_2001.pdf

Amber, R.K.R., and Hygelund, B.N., 2001, Contamination of two Oregon reservoirs by cinnabar mining and mercury amalgamation: *Environmental Geology*, v. 40, no. 6, p. 669-707.

Butcher, J., Schmidt, M., and Fernandez, M., 2019, Mercury TMDL development for the Willamette River Basin (Oregon) - Technical Support Document (Public Review Draft): Tetra Tech Inc., Research Triangle, NC, 162 p.
<https://www.oregon.gov/deq/FilterDocs/wbmtmdl042019mm.pdf>

Brannan, K., Liverman, A., Matzke, A., Woolverton, P., 2019, Revised Willamette Basin mercury TMDL, draft for public comment: Oregon Department of Environmental Quality Report, 207 p.
<https://www.oregon.gov/deq/wq/tmdls/Pages/willhgtmlac2018.aspx>

Brigham, M.E., Wentz, D.W., Aiken, G.R., and Krabbenhoft, D.P., 2009, Mercury cycling in steam ecosystems. 1. water column chemistry and transport: *Environmental Science and Technology*, v. 43, n. 8, p. 2720-2725.

DEQ (Oregon Department of Environmental Quality), 2013, Development of Oregon background metals concentration in soil: Oregon Department of Environmental Quality Technical Report, 38 p.
<https://www.oregon.gov/deq/FilterDocs/DebORbackgroundMetal.pdf>

DEQ (Oregon Department of Environmental Quality), 2019a, Agenda item D, Informational item: Willamette Basin Mercury Total Maximum Daily Load, July 18-19, 2019, EQC meeting: Oregon Department of Environmental Quality Memorandum, 9 p.

https://www.oregon.gov/deq/EQCdocs/07182019_D_WillametteMercuryTMDL.pdf

DEQ (Oregon Department of Environmental Quality), 2019b, Environmental Cleanup Site Information (ECSI) Database Site Summary Full Report - Details for Site ID 3166, Vesuvius Mine. Accessed August 29, 2019.

<https://www.deq.state.or.us/lq/ECSI/ecsdetailfull.asp?seqnbr=3166#actions>

DEQ (Oregon Department of Environmental Quality), 2019c, Environmental Cleanup Site Information (ECSI) Database Site Summary Report - Details for Site ID 3869, Champion Mine - Private. Accessed August 29, 2019.

<https://www.deq.state.or.us/lq/ECSI/ecsdetail.asp?seqnbr=3869>

Diller, J.S., and Knowlton, F.H., 1900, The Bohemia mining region of western Oregon, with notes on the Blue River mining region and on the structure and age of the Cascade Range https, by Mr. Diller; accompanies by a report on the fossil plants associated with lavas of the Cascade Range, by Mr. Knowlton: in the Twentieth Annual Report of the United State Geological Survey, Part III: U.S. Geological Survey Annual Reports of the Department of the Interior p. 1-64.
[USGS//pubs.usgs.gov/ar/20-3/report.pdf](https://pubs.usgs.gov/ar/20-3/report.pdf)

DOGAMI (Oregon Department of Mineral Industries), 1951, Oregon Metal Mines Handbook: Oregon Department of Geology and Mineral Industries Bulletin B-14D, 173 p. <https://www.oregongeology.org/pubs/B/B-014D.pdf>

Eagles-Smith, C.A., Wiener, J.G., Eckley, C.S., Willacker Jr., J.J., Evers, D.C., Marvin-DiPasquale, M.C., Obrist, D., Fleck, J.A., Aiken, G.R., Lepak, J.M., Jackson, A.K., Stewart, A.R., Webster, J., Davis, J.A., Alpers, C.N., Ackerman, J.T., 2016, Mercury in western North America- A synthesis of environmental

contamination, fluxes, bioaccumulation and risk to fish and wildlife: *Science of the Total Environment*, 568, p. 1213-1226.
<https://doi.org/10.1016/j.scitotenv.2016.05.094>

Eckley, C.S., Luxton, T.P., Goetz, J., and McKernan, J., 2017, Water-level fluctuations influence sediment porewater chemistry and methylmercury production in a flood-control reservoir: *Environmental Pollution*, v. 222, pp. 32-41.

Fleck, J.A., Alpers, C.N., Marvin-DiPasquale, M., Hothem, R.L., Wright, S.A., Ellett, K., Beaulieu, E., Agee, J.L., Kakouros, E., Kieu, L.H., Eberl, D.D., Blum, A.E., and May, J.R., 2010, The effects of sediment and mercury mobilization in the South Yuba River and Humbug Creek confluence area, Nevada County California: Concentrations, speciation, and environmental fate-Part 1: Field Characterization: U.S. Geological Survey Open-File Report 2010-1325A, p. 1-104.

Halup, 2001, *The Bohemia Mining District: An historical reconstruction*: Oregon State University, 24 p.
<http://oregonstate.edu/instruct/fw470/Bohemia%20Mining%20District.pdf>

Hardin, C.E., (1909), *The Black Butte quick silver mine*: Senior Thesis, University of Oregon, Eugene, 22 p.

Henny, C.J., Kaiser, J.L., Packard, H.A., Grove, R.A., and Taft, M.R., 2005, Assessing mercury exposure and effects to American Dippers in headwater streams near mining sites: *Ecotoxicology*, v. 14, pp. 709-725.

Hoyer, I.C., 2003, *Bohemia gold, Bohemia Mining District, Lane County, Oregon, The bonanza years, 1885-1910*: Bohemia Mine Owners Association, Inc. Cottage Grove, Oregon.

Hygelund, B.N., Ambers, R.J.R., and Ambers, C.P., 2001, Tracing the source of mercury contamination in the Dorena Lake watershed, Western Oregon: *Environmental Geology*, v. 40, p. 853-859.

Khandoker, R.A., 1997, *Distribution of heavy metals and trace elements in soils of southwest Oregon*: MS thesis, Portland State University, Portland, Oregon.
https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=5762&context=open_access_etds

Lutton, R.J., 1962, *Geology of the Bohemia mining district, Lane County, Oregon*: Ph.D. dissertation, University of Arizona, Tucson, Arizona.
<https://repository.arizona.edu/handle/10150/565597>

MacDonald, D.F., 1909, Notes on the Bohemia Mining District, Oregon, in Hays, C.W., and Lindgren, W., 1908, *Contributions to Economic Geology, Part 1*, : U.S. Geological Survey, Bulletin 380a, p. 80-84.
<https://pubs.usgs.gov/bul/0380a/report.pdf>

Marcy K., 2005, Preliminary assessment/site inspection, upper Row River watershed, Lane County, Oregon: U.S. Environmental Protection Agency (EPA) Preliminary Assessment/Site Inspection Report TDD:04-04-0008, 73 p.
<https://www.deq.state.or.us/Webdocs/Controls/Output/PdfHandler.ashx?p=cd56bab5-f5b0-4d4e-b225-718516e32676pdf&s=EPA%20PA-SI%20rpt.,%20Dec,%202005.pdf>

Marvin-DiPasquale, M., Agee, J.L., Kakouros, E., Kieu, L.H., Fleck, J.A., and Alpers, C.N., 2010, The effects of sediment and mercury mobilization in the South Yuba River and Humbug Creek confluence area, Nevada County, California: Concentrations, speciation, and environmental fate-Part 2: Laboratory experiments: U.S. Geological Survey Open-File Report 2010-1325B, 54 p.

Mawson, 2019, Mawson Resources Ltd.
<http://mawsonresources.com/projects/sweden>

NGS, 2016, National Geochemical Database: Sediment: U.S. Geological Survey.
<https://mrdata.usgs.gov/ngdb/sediment/>

NGDB, 2008, National Geochemical Database: Rock: U.S. Geological Survey.
<https://mrdata.usgs.gov/ngdb/rock/>

Niewendorp, C.A., and Geitgey, R.P., 2008, MILO-2, Mineral Information Layer for Oregon (MILO)-release 2: Oregon Department of Geology and Mineral Industries Digital Data Series.
<https://www.oregongeology.org/pubs/dds/p-MILO-2.htm>

Peck, D.L., Griggs, A.B., Schlicker, H.G., Well, F.G., and Dole, H.M., 1964, Geology of the central and northern parts of the Western Cascade Range in Oregon: U.S. Geological Survey Professional Paper 449, 56 p.

Schaubs, M.P., 1978, Geology and mineral deposits of the Bohemia mining district, Lane County, Oregon: Corvallis, Oreg., Oregon State University M.S. thesis, 135 p.

Shacklette, H.T., and Beorngen, J.G., 1984, Element concentrations in soils and other surficial materials of the conterminous United States: U.S. Geological Survey Professional Paper 1270, 104 p. <https://pubs.usgs.gov/pp/1270/>.

Smith, D.P., and Ruff, L.L., 1938, The geology and mineral resources of Lane County, Oregon: Oregon Department of Geology and Mineral Resources, Bulletin B-011, 43p. <https://www.oregongeology.org/pubs/B/B-011.pdf>

Steinnes, E., 1993, Mercury, in Alloway, B.J., ed., Heavy Metals in Soils: John Wiley & Sons, Inc., New York, Chapter, 11, p. 222-236.

Symbiotics, LLC, 2008, Evaluation and Findings Report on the Application for Certification Pursuant to Section 401 of the Federal Clean Water Act, Dorena Dam Hydroelectric Project (FERC No. 11945): p. 76.
<https://www.oregon.gov/deq/FilterDocs/Dorena11945evalfindings.pdf>

September 3, 2019

Andrea Matzke, Basin Coordinator 700 NE Multnomah Street, Suite 600
Portland, OR 97232

Submitted via email to: WillametteMercuryTMDL@deq.state.or.us

Re: Comments on the Revised Willamette Basin Mercury TMDL
including the associated Water Quality Management Plan and Technical Support
Document.

Dear Andrea:

Clean Water Services (District) appreciates the opportunity to comment on DEQ's Revised Willamette Basin Mercury TMDL (TMDL) and the associated Water Quality Management Plan (WQMP) and Technical Support Document. The District is a county service district, located in Washington County, Oregon, providing sanitary sewer service, stormwater management, and environmental restoration for nearly 600,000 residents and the businesses and industries that support the local and global economy. The District holds an integrated watershed-based NPDES permit covering the sanitary sewer conveyance system, four wastewater treatment plants, and the municipal separate storm sewer system (MS4) serving urbanized Washington County. The District also acts as the agent for DEQ in administering the industrial stormwater (1200-Z) and construction stormwater (1200-C and 1200-CN) permit programs. Adoption of the TMDL and associated WQMP as proposed would significantly impact the District and the communities it serves. The TMDL recognizes the global contributions of mercury in the Willamette Basin and requires strategies to reduce local sources and management practices to minimize the transport of mercury to streams. The following comments include suggested revisions to further clarify those requirements.

48. **Robert P. Baumgartner, Clean Water Services, Oregon**

TMDL

1. Section 10, Allocations: On page 61 of the TMDL, the next-to-last sentence of the first paragraph states, "The waste load allocations are used to establish effluent limits in discharge permits." Since the TMDL is not suggesting inclusion of numeric effluent limits in permits but rather narrative management practices to implement the wasteload allocations, this sentence should be revised to state that "the implementation strategy associated with the wasteload allocations is incorporated into discharge permits."

2. Section 10, Allocations, Table 10-1: This table summarizes the allocations in terms of percent load reductions across several source sectors. Since this table is likely to be a key reference in interpreting and implementing TMDL requirements, it is critical that it be clear and accurate. The following are recommendations:

a. The source sector "Non-permitted urban stormwater" is included twice in the table, once under General Nonpoint Source and Background with an allocation of 88 percent reduction and again in its own sector with a 75 percent reduction. Either clarification is warranted or the source sector should be removed from the General Nonpoint Source sector so that the allocation of 75 percent reduction is clear.

b. The source sector "Atmospheric deposition" is included twice, once as a component of General Nonpoint Source and Background sector at 88 percent reduction, and again in its own source sector with 11 percent reduction. It is unclear what DEQ expects for reduction in atmospheric deposition. If DEQ anticipates an 11 percent reduction, then DEQ should remove atmospheric reduction from the General Nonpoint Source sector.

c. The text is unclear regarding Reserve Capacity. Footnote 3 in Table 10-1 is unclear how an additional 1 percent reduction from atmospheric deposition would be available for reserve capacity. The text should clarify how the 1 percent allocation was derived and how a future reduction is available for reserve capacity.

d. Table 10-1 allocates a 10 percent reduction to NPDES Wastewater Point Source Discharges, but the TMDL applies this reduction only to major municipal NPDES discharges and excludes minor municipal facilities as de minimis and not subject to the 10 percent reduction. Table 10-1 should be explicit that only major municipal NPDES discharges are subject to the 10 percent reduction allocation. It would be helpful to be explicit on permit expectations (even if none) for de minimis sources to limit future confusion related to permit conditions. Also, any clarification of how the reduction would apply if a minor source becomes a major source due to growth or pretreatment would be helpful.

3. Section 12, Reserve capacity: This section generally discusses the allocation of reserve capacity for future growth, stating that "DEQ used an explicit reserve capacity of 1 percent." Footnote 3 of Table 10-1 states, "Reserve capacity is not allocated as a percent reduction, rather an additional 1 percent reduction is required from atmospheric deposition, which will be used for any needed reserve capacity." It seems that the TMDL depends on future reductions in air deposition to provide reserve capacity to accommodate future growth. The TMDL does not explain how DEQ would apply the reduction and therefore how a source could depend on this reduction to support growth. How will DEQ determine if this reduction has been met and the reserve capacity is available? It is also unclear how a 1 percent reserve capacity will be allocated under the sector-based load-reduction approach used in the TMDL if it is not allocated as a percent reduction. The discussion of reserve capacity needs to clearly explain how the reserve capacity will be generated, confirmed, and allocated.

WQMP

4. Section 13.1.1, Implementation Plans: This section states that wasteload allocations and/or other management strategies identified in the TMDL and WQMP will be incorporated into renewed NPDES permits as enforceable provisions. Since the draft TMDL includes specific permit conditions that will be included in NPDES permits to implement the sector-specific wasteload

allocations, this section should clearly state that the wasteload allocations will be implemented by incorporating the management strategies identified in Section 13.3.2. and not by including the sector-specific wasteload allocations from Table 10-1 into NPDES permits.

5. Section 13.3.1.11, Local Government: Cities and Counties.

a. Section 13.3.1.11.1 requires MS4 permittees to develop and submit TMDL implementation plans demonstrating how nonpoint source load allocations will be met, including management strategies to reduce runoff and erosion that discharge directly to waterbodies. Under an approach long recognized by DEQ, the District is the stormwater authority for urban Washington County, with Washington County and the cities of Banks, Beaverton, Cornelius, Durham, Forest Grove, Hillsboro, King City, North Plains, Sherwood, Tigard, and Tualatin recognized as co-implementers, along with the District, of a single, comprehensive Storm Water Management Plan. The District is the sole MS4 Phase I permittee for discharges from the MS4 in urban Washington County to waters of the state. Although not permittees, the 12 co-implementers are covered by the District's MS4 permit, as correctly described in Table 9-5 and noted in Appendix E. To be consistent with this established structure, the WQMP should not require individual TMDL implementation plans or nonpoint source plans from each of the co-implementers, rather the TMDL should allow a more comprehensive approach.

b. The District has an established working relationship with the City of Gaston (which is within the District's jurisdiction, but outside the MS4) and with Washington County (a co-implementer that also will be responsible for rural areas outside the MS4) that ensures successful cooperation to address water quality in the Tualatin basin. The comments below reflect the District's concern that the WQMP's highly prescriptive requirements will impact that relationship and divert local resources away from programs that have shown demonstrated success.

The WQMP's requirement to implement the six minimum measures from the Phase II rule is not appropriate for sparsely populated regions outside of MS4 permitted areas, such as those in rural Washington County. Although much of Washington County is densely urban, the area outside the Washington County MS4 area is outside the Urban Growth Boundary and is distinctly rural, typified by dispersed population in agricultural and predominantly less developed areas. The six minimum measures were developed for urban areas; applying them outside MS4 permitted areas could appear to be an attempt to impose MS4 permit requirements on locations that are neither Phase I nor Phase II communities. A more tailored approach that provides the opportunity for the counties to develop control strategies better designed for the rural areas would be more effective than narrowly construed application of the six minimum control measures. Of particular concern is the specificity of the descriptions in Table 13-10 and the resource demands they will exert. This specificity does not reflect a consideration of local resources and needs, as required by the Maximum Extent Practicable (MEP) standard for municipal stormwater discharges. The MEP standard requires consideration of unique local conditions such as receiving waters, size of the

community, fiscal resources, hydrology, geology, and capacity to perform operation and maintenance.

Rather than imposing these requirements on small communities and rural counties, the TMDL should describe the six minimum measures more generally and provide them as potential elements to be considered for inclusion in programs tailored to local needs and capabilities. General descriptions of the six minimum measures should not include thresholds (such as land disturbance area for construction site runoff control or post-construction) or treatment levels (such as TSS removal targets). Program elements such as mapping and inventorying hundreds of miles of roadside ditches as part of an Illicit Discharge Detection and Elimination program may not be a good use of resources.

Clearly, should an illicit discharge be identified as a source of mercury, it should be controlled. Similarly, regulation of waste materials at construction sites beyond that regulated by the 1200C permit should be left to the discretion of the local government in their development of a TMDL implementation plan dependent on the likely source of mercury.

This section (and much of the WQMP) uses the terms "urban streams," "urban runoff," and "urban stormwater" when discussing rural areas. These terms do not appear to be appropriate for describing circumstances in much of the rural area subject to regulation under this section. While the text states, "DEQ anticipates that city and county DMAs will largely focus on activities and strategies to reduce runoff and erosion into urban streams and stormwater conveyance systems," the WQMP instead precludes this focus and requires MS4-permitted counties to implement the six minimum measures throughout their jurisdictions, whether urban or rural and in areas without stormwater conveyance systems. DEQ should review the proposed language to clarify their expectation on how the counties draw from the six control measures to develop effective control strategies focusing on sources of mercury or opportunity to intercept and control the movement of mercury to streams.

6. Section 13.3.1.17, Clean Water Services:

a. The District and 12 co-implementers implement a single Stormwater Management Plan only within the urban portions of Washington County, which is a much smaller area than the Tualatin Basin in the county. The first paragraph of this section should be corrected.

b. This section begins by affirming that the District's MS4 permit serves as its TMDL implementation plan for the MS4 area (i.e., point sources). Then, repeating a requirement from 13.3.1.11, it requires the District to update its TMDL implementation plan to ensure inclusion of measures to reduce runoff and erosion that discharge directly to waterbodies (i.e., nonpoint sources), and to post its nonpoint source implementation plan on its website.

The District applies the MS4 programs (including those to control erosion and runoff from construction sites, to eliminate illicit discharges, and to regulate industrial and commercial facilities) to nonpoint (non-MS4) discharges under the District's authority to manage surface waters in its jurisdiction. In addition, the District requires riparian protection and restoration as part of development outside

of the MS4, and performs riparian corridor work and stream restoration outside the MS4 to improve water quality. The District will develop a TMDL implementation plan documenting the measures to address nonpoint sources of stormwater discharge, covering the District and co-implementers.

7. Section 13.3.1.22, Reservoir management: The introductory paragraph to section 13.3 on page 78 states,

This section of the plan describes management measures, as required in 340-042-0040(4)(1)(C), to reduce loadings of mercury to Willamette Basin waterbodies to meet TMDL load and wasteload allocations. It is organized by nonpoint and point source DMAs and responsible persons. For some of the DMAs, DEQ included a list of management measures as an implementation or "good practice" baseline. The list is not intended to be comprehensive or prescriptive and DMAs and responsible persons may propose alternative approaches or management strategies. (emphasis added).

Since Table 13-19 is titled "Examples of Best Management Practices," it seems that the BMPs in Table 13-19 are not intended to be prescriptive and that DMAs may propose alternatives as provided in the quoted paragraph. However, the sentence at the top of page 111 refers to these BMPs as "requirements." That sentence should be revised to refer to the examples of reservoir BMPs that DMAs may consider in developing their management strategies.

8. Section 13.3.2.1.3, Additional NPDES wastewater permit implementation tools: Since the WQMP does not recommend including effluent limits in NPDES discharge permits, this section on variances and intake credits is not relevant and could lead to confusion. DEQ should remove this section from the final WQMP.

9. Section 13.3.2.2.1, Municipal Separate Stormwater Sewer System: This section requires the inclusion of specified terms in MS4 Phase I permits upon renewal to implement the TMDL. The District notes the following:

a. The first bullet requires a mercury minimization section within the "Stormwater Management strategy." Presumably this refers to the permittee's Stormwater Management Plan (SWMP), not a separate document. Given the comprehensive nature of SWMPs, a second, redundant document should not be required. This section should be clear that it refers to the SWMP.

b. The second sub-bullet, beginning, "An effectiveness monitoring strategy . . ." should instead require a strategy for evaluating the effectiveness of control measures. The use of the term "monitoring" could be interpreted to require only water quality monitoring, which is not necessarily the most effective way to evaluate the effectiveness of control measures, which are predominantly Best Management Practices. Requiring evaluation of effectiveness allows more flexibility across the range of control measures.

c. The last bullet requires submittal of a pollutant load reduction evaluation (PLRE) and Wasteload Allocation Attainment Analysis (WLAA). The previous bullet acknowledges that there are insufficient data to develop benchmarks. Since the same data used to create benchmarks would be required to conduct both the

PLRE and WLAA, these analyses should be treated the same as the requirement to develop benchmarks. That is, that benchmarks, PLREs, and WLAAs should not be required in the first permit cycle.

Instead, the permit should require collection and submittal of mercury data during the first permit cycle. The benchmarks should be established and PLRE and WLAA should be conducted in the second permit cycle.

Technical Support Document

10. Table 5-9: Table 5-9 apparently includes a mix of actual and design flows presented in the "Average Flow" column. Actual and design flows can differ substantially. Since the purpose of the evaluation is to estimate current mercury loads, it would be more appropriate to use actual flows rather than design flows.

11. Target Fish Species: The District continues to have concerns with the use of the Northern Pike minnow as the target fish species in the TMDL, particularly around communication to the public. Unfortunately, the primary message to the public is likely to be that fish in the Willamette River are highly contaminated and should not be consumed, which is not an accurate or appropriate message. To convey a more accurate picture of fish consumption considerations in the Willamette River basin, DEQ should reconsider the use of a fish that is not widely consumed. Additionally, the use of the Northern Pike minnow as the target fish species establishes an unrealistic goal for the TMDL. DEQ should use more widely consumed fish to provide more meaningful and realistic shorter-term goals for in-stream mercury concentrations, perhaps with longer term targets for other fish.

12. Stormwater modeling: DEQ should provide more information in the Technical Support Document on the approaches and data used for stormwater modeling. In particular, the areas used for MS4 modeling should be provided, along with the jurisdictions used in the model, the impervious areas and estimated effective impervious area used. Understanding these model inputs is critical for developing benchmarks and conducting future PLREs and WLAAs. Having these inputs will allow meaningful comparisons to the modeled current loads.

The District appreciates the effort required of DEQ to develop the draft TMDL and hopes that these comments will contribute to a final version that will protect Oregon water quality. If you have any questions or would like to discuss these comments or other aspects of the draft TMDL, please do not hesitate to contact me.

Sincerely,

Robert P. Baumgartner Regulatory Affairs Director

49. Vivian Christensen, Oregon

September 3, 2019

Public Comment: Willamette Basin Mercury TMDL

The health problems posed by exposure to mercury are real. According to the Agency for Toxic Substances and Disease Registry (ATSDR), exposure to mercury has the potential to permanently damage the brain, kidneys, and developing fetus. The effects on brain functioning include tremors, changes in vision or hearing, and memory problems. Mercury's harmful effects can also be passed from a mother to her fetus, resulting in brain damage, mental retardation, incoordination, blindness, seizures, and inability to speak. I am writing to urge the DEQ to put the health of Oregonians first and foremost when updating allowable mercury emissions standards. Currently, Oregon's air and water pollution regulation standards are among the weakest in the country. This needs to change. It is time for DEQ to prioritize public health ahead of industry profit. Please do the job Oregonians need you to do, which is to "be a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water." Thank you for your consideration.

Sincerely,
Vivian Christensen

50. Sam Sweeney, Oregon

DATE: August 30, 2019

TO: DEQ Staff

REGARDING: Proposed TDMLs on Mercury

FROM: Sam Sweeney, Farmer in Yamhill County Oregon

It is my understanding that DEQ is proposing TDMLs on Mercury levels in the waters of Western Oregon agricultural and Forest lands. It is also my understanding that the mercury that could be present in Western Oregon is coming from other nations coal burning plant's emissions.

Common sense would indicate that this is an international problem that should be addressed by the federal government with a goal of implementing a plan of action with other nations to eliminate or reduce these emissions. Clearly, this issue is beyond a state agency to solve the underlying problem caused by other nations. It is also unfair to agriculture and forestry to say that this is their problem and require them to take action to prevent any mercury from entering public water ways. All of Oregon's water basins are under the jurisdiction of the Oregon Department of Agriculture and the Agricultural Water Quality Management Area plans required under SB1010. Oregon farmers are doing what they are required to do in the individual river basin plans. To comply with additional plans proposed by DEQ is not only unfair but would likely usurp ODA's jurisdictional rights granted under SB1010.

It would seem prudent before DEQ proceeds any further that they would develop a scientific study that would examine mercury emissions and find ways or methods to reduce their impact on Western Oregon soils. To require Oregon farmers to comply with TDMLs without a scientifically based study discredits DEQ as a governing regulatory agency. ODA should be part of this study as a cooperating natural resource agency.

Sincerely,
Sam Sweeney

51. Dave Bielenberg, East Valley Water District, Oregon

Dave Bielenberg, Chair East Valley Water District PO Box 1046
Mt. Angel, OR 97362

September 3, 2019

Andrea Matzke, Basin Coordinator
Oregon Department of Environmental Quality 700 NE Multnomah Street, Suite
600
Portland, OR 97232

Dear Andrea Matzke,

This letter was drafted and submitted on behalf of the East Valley Water District (EVWD), an irrigation district formed under ORS 545 that represents dozens of family farms in Woodburn, Molalla, Mt. Angel and Woodburn extending from the Pudding River to the west, to the Cascade Mountain foothills to the east. EVWD does not deliver water to its members, and EVWD's activities do not have the potential to discharge mercury into waters of the state. Although EVWD has applied for a water storage permit that would allow EVWD to store water in a surface water reservoir to be constructed on Drift Creek, a tributary of the Pudding River, EVWD does not currently own or operate a water supply or water conveyance system.

EVWD is one of the 47 water conveyance entities that was listed as a Responsible Party (RP) for the Mercury TMDL for the Willamette Basin under the assumption that our activities have potential to discharge mercury into the waters of the state. While we understand that RPs are not Designated Management Agencies (DMAs), this draft TMDL lists us as a "OMA Category" creating a significant amount of uncertainty over the meaning of this term and the implication it has for irrigation districts like EVWD. Additionally, our classification in the TMDL as generic "water conveyance entities" fails to acknowledge the separate and distinct statutory authorities and responsibilities of each entity (see ORS 545). First, as an irrigation district, EVWD lacks the authority and resources to implement water quality measures for mercury. There are no methods, resources, or authorities for our district to reduce mercury in water. Our activities are unlikely to reduce, or impact, the amount of mercury in the Willamette Basin because EVWD does not currently own or operate a water supply or water conveyance system. However, if EVWD is successful in developing a storage reservoir, EVWD will be responsible for delivering a specific quantity of water to our patrons, not a specific quality of water. Irrigation districts lack statutory authority to compel their members to implement specific land management practices and are not responsible for the land management practices of individual district members. EVWD will not own or control lands upstream from the proposed reservoir site and will lack the authority or ability to manage the mercury levels of water and sediment that enter the reservoir. While we understand that DEQ states water conveyance entities are responsible for only sedimentation resulting from conveyance systems, not from upland agricultural activities, it is unclear how that separation will be made since there is no data that allocates mercury to alleged water conveyance activities versus upland activities. EVWD is a small district governed by a volunteer board and one part-time contract staff member. We do our best to utilize our limited resources wisely and

actively work with our local partners, including the soil and water conservation districts in Marion and Clackamas counties and watershed councils, to implement water quality measures. When EVWD secures its water right and constructs a water conveyance system, our involvement in water quality improvement practices will

East Valley Water District continue. At that time, if DEQ is able to provide guidance on reducing mercury, we will work with our partners to abate it. However, at this time, there is a lack of information about water conveyance entities' impacts to mercury. This coupled with the lack of clarity over the role of an RP gives us a lot of concern about onerous regulation of our district without concrete evidence that we have any ability to reduce mercury in our portion of the basin.

Thus, because our district does not have a water supply nor a conveyance system, our district does not have the authority to regulate water quality, and the lack of information about our impact to mercury, we believe that EVWD and irrigation districts similar to us, should not be included as an RP or DMA in this TMDL. Sincerely,

Dave Bielenberg, Chair, EVWD Board of Directors

**52. Jayne
Carlin,
EPA**



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September 5, 2019

**53. Sidney
Mulder, Polk
County,
Oregon**

Oregon Department of Environmental Quality Attn: Andrea Matzke
700 NE Multnomah Street, Suite 600 Portland, OR 97232

RE: Willamette Basin Mercury TMDL, Polk County Comments

Dear Andrea Matzke:

Specific requirements for Construction Site Runoff Plans and Post-Construction Site Runoff Plans are concerning. Polk County is very rural with large tracts of land that are managed for timber and agricultural production. Much of the County has an 80-acre minimum parcel size, but it is not uncommon for tracts to exceed hundreds of acres. Requiring a 0.5-acre and 0.25-acre threshold for these Plans is unreasonable when the amount of disturbed land or impervious surface is disproportionate in comparison to the entire tract size and field conditions. For example, this permit would necessitate counties to require a Post-Construction Site Runoff plan when a property owner constructs an 11,000 square foot outbuilding on a 160-acre sized property that is entirely managed for timber production. Natural processes would filter stormwater runoff and the chances of off-site discharge is unlikely. This scenario would be frequent under the current draft permit language.

Rather than having a standard acreage threshold (ie 0.5 acre or 0.25 acre), an alternative could be based on a ratio of disturbed land/impervious surfaces compared to tract size and field conditions. Proximity to surface water may also be a relevant factor to consider.

There is a strong correlation between stormwater pollutants and development density, which is why counties should not be required to uphold the same permit requirements as incorporated communities. This matter was contemplated during the development of the MS4 Phase I permit. After number of concerns were raised by counties, all counties were put into the "Small Community" category even though they exceed 10,000 people. The MS4 Phase II definition of Small Communities is, "...any permit registrant that has a population of less than 10,000 people or is a county that is the sole permit registrant/applicant. If the county is a co-registrant at the time of permit coverage or becomes a co-registrant at any time of permit coverage under this permit, it is not eligible for this exemption." This logic should be applied to this TMDL permit as well by allowing all counties to be subject to the same requirements as communities with a population of < 5,000 people.

Funding is always a concern for implementation. Rural properties are not served by city services that have associated stormwater fees as part of a utility bill. Therefore, counties do not have the same means for generating revenue to fund stormwater programs. There are very limited opportunities to generate funding and this permit would likely increase development costs for property owners significantly.

Lastly, it is requested that any permit revisions have an additional review and comment period to voice further concerns about any future permit changes.

Sidney Mulder Planning Supervisor
Community Development

September 5th, 2019

**54. Kyle
Abraham,
Oregon
Department
of Forestry,
Oregon**

Andrea Matzke Basin Coordinator
700 NE Multnomah Street, Suite 600 "STEW"
Portland, OR 97232

Dear Andrea,

Please find the Oregon Department of Forestry (ODF) comments on the July 3, 2019 draft mercury Total Maximum Daily Load (TMDL) and Water Quality Management Plan (WQMP) for the Willamette Basin submitted to the Department of Environmental Quality (DEQ) during the public comment period. The Oregon Department of Forestry served on the Willamette Basin Mercury TMDL Advisory Committee from 2017 to 2019 and have attended regular meetings throughout that time. We appreciate the opportunity to serve on that committee as well as the opportunity to comment on the TMDL and WQMP draft.

After reviewing the TMDL and WQMP draft, we provided edits to improve clarity of the TMDL and WQMP and to amend specific ODF or Forest Practices Act (FPA) terminology. There are aspects of the TMDL that we support such as the recognition of inherent uncertainty associated with complex modeling analysis at large spatial scale, strategies for ODF to reduce mercury loading to streams, working with DEQ to collaboratively implement these strategies, and the flexibility for setting specific timelines in the plan. There are some aspects of the TMDL and WQMP that we oppose. We appreciate the level of detail provided on the THg vs. TSS analysis, however, we are not convinced that the use of total suspended solids (TSS) as a surrogate is appropriate. Regarding allocations to non-point and point sources, we understand the approach that was used, but we feel that the proportionality approach requires further evaluation through the use of monitoring and we look forward to engaging in that discussion with DEQ.

A key goal of the FPA is to minimize sediment delivery to streams from forest operations for the protection of water quality and fish habitat. ODF has embraced adaptive management as part of the decision-making process, which includes evaluating the effectiveness of the FPA rules in achieving the goals for water quality. ODF also regularly conducts implementation monitoring to evaluate compliance of the FPA rules.

Furthermore, forest landowners are good stewards of the land and have made additional efforts to reduce the risk of sediment delivery through voluntary measures under the Oregon Plan for Salmon and Watersheds. In moving forward with the development of the implementation plan, we feel collaborative efforts with DEQ will help to further minimize

sediment delivery to streams and benefit water quality and fish in Oregon. We look forward to working with DEQ in implementing the plan and strategies described in the WQMP as part of administering the FPA.

Sincerely,

Kyle Abraham
Private Forests Division Division Chief

cc. Tom Imeson, Chair, Board of Forestry
Joe Justice, Board of Forestry, liaison to Environmental Quality Commission
Peter Daugherty, Oregon State Forester
Oregon Department of Forestry Executive Team

ODF COMMENTS: REVISED WILLAMETTE BASIN MERCURY TMDL
DRAFT FOR PUBLIC COMMENT

1. APPROACH

In this document the Oregon Department of Forestry (ODF) provides section-specific comments for the Department of Environmental Quality's consideration on their July 3, 2019 draft mercury Total Maximum Daily Load (TMDL) and Water Quality Management Plan for the Willamette Basin. It is formatted by TMDL section TITLE and [Section] followed by identified "ODF Comment(s)". We are looking forward to continued engagement on this topic as we move forward into the implementation planning phase.

2. EXECUTIVE SUMMARY

2.1. ODF Comment: We appreciate the inclusion of the inherent uncertainty of such a large, complex analysis being included in the report summary.

2.2. "Of the many different types of land use that exist within the Willamette Basin, forestry, agriculture, and urban uses dominate across the basin." (pg. 11)
ODF Comment: Please revise this by stating that land-uses that contribute to non-point sources dominate (X%) the total land area of the Willamette Basin. Also, please define non-point sources here.

2.3. "...for the eventual attainment of the mercury criterion and, ultimately, full restoration of the beneficial use of fish consumption and protection of aquatic life and wildlife throughout the Willamette Basin." (pgs. 11-12)
ODF Comment: It is ODF's opinion that full restoration of the beneficial use will never be achieved if the issue of the atmospheric deposition of mercury on our state from outside national and international sources is not addressed. At least, an attempt should be made to identify contamination sources within and outside of DEQs sphere of influence to help set reasonable goals for reductions by Designated Management Agencies (DMAs) here in Oregon.

3. STREAM FLOW [Sec. 1.2.4]

ODF Comment: We appreciate the recognition that streamflow is highly modified due to dams and reservoirs with "...unintended consequences that influence water quality." We recommend that this be included in a monitoring program to better understand how this facet influences the mercury cycle in the Willamette basin.

4. EXCESS LOAD [Sec. 7.2]

4.1. "DEQ decided to pool all of the HUC8 data together and calculate a single median for the existing surface water total mercury concentration for the

entire Willamette Basin.” (pg. 44) ODF Comment: This is an understandable approach if you tested for and did not find differences between sample sites. If there are particular HUC 8’s that are driving the mercury contamination levels in the Willamette Basin it would be important to identify those and focus recovery efforts there. The exclusion of the Coast Fork is an example. Still, it begs the question of whether mercury is a universal issue across the Willamette Basin or is driven by particular HUC 8’s deserving a more site-specific approach. ODF recommends that the core assumption of equal contributions across watersheds be checked as part of implementation monitoring plans.

5. BENEFICIAL USES [Sec. 2]

5.1. “The revised TMDL for mercury is designed to restore the beneficial use of fishing to the Willamette River and its tributaries.” (pg. 23) ODF Comment: See Executive Summary comments, part 2.3.

6. SUMMARY OF MERCURY TMDL DEVELOPMENT AND APPROACH

[Sec. 5]

6.1. Mercury TMDL Approach [Sec. 5.2]: “Within a watershed, wetlands or areas with saturated soils can often provide important locations for methylmercury production. The relative importance of internally produced (within the waterbodies and their sediments) or externally produced (within soils and groundwater prior to reaching waterbodies) sources of methylmercury has not been assessed for the Willamette Basin.” (pg. 28) ODF Comment: Some clarification as to whether the model accounted for this uncertainty, or any way to quantify this uncertainty, would be helpful. ODF recommends this as a monitoring opportunity for DEQ’s implementation plan. Further, better understanding the potential linkages between carbon sources in water (dissolved organic carbon and particulate organic carbon) might be one approach to improve understanding of mercury cycling and export, particularly in the forest environment.

7. EXPLANATION OF MODELS AND CURRENT MERCURY LOAD [Sec. 6]

7.1. Nonpoint source input data development (Sec. 6.1.4.). ODF Comment: It isn’t clear by this description of how non-point sources vs. point sources were distinguished by land-use and how non-point and point sources were teased apart in Table 6-7. Some discussion (here or elsewhere) on the connection between Table 6-7 and Table 1-3 would be beneficial for the reader.

7.2. Groundwater [Sec. 6.1.4.3]. “As such, this resulted in large loads of total mercury (approximately 17 percent of the total source load to the stream network) estimated from groundwater contributions.” (pg. 41) ODF Comment: ODF

recommends that groundwater as a mercury source be included as a key monitoring opportunity in the implementation plan.

7.3. Current total mercury load estimation [Sec. 6.2]: “The great majority of the load (greater than 95%) is from nonpoint sources....point sources accounting for less than five percent.” ODF Comment: Please be specific: ‘Based on the model output, nonpoint sources contributed 95.7% of the total load and point sources contributed 4.3%.’

8. NONPOINT SOURCES [Sec. 9.2]

8.1. “As noted in Figures 5-17 and 5-18 of the TMDL Technical Support Document, modeling indicates that the source categories of surface runoff and sediment erosion together contribute approximately 76 percent of the total mercury load to basin streams. These two source categories are implicated in nonpoint source load contributions due to land use management activities (agriculture, forestry, impoundments, water conveyances, background and non-MS4-permitted urban areas), as well as stormwater point source contributions. Figure 5-19 of the TMDL Technical Support Document indicates that 86 percent of surface runoff and 91 percent of sediment erosion may be affected by the natural and anthropogenic activities within the forestry, agriculture and urban development land use areas.” ODF Comment: ODF looks forward to addressing these concerns as part of the implementation plan under the FPA, both with describing its approach to sediment control and with identifying priority areas to clarify areas of uncertainty through monitoring.

9. ALLOCATIONS [Sec. 10]

9.1. “Furthermore, the mercury reduction potential from these sources is high because some activities in the category have not implemented mercury minimization measures and the large aggregated load means that even relatively small percentage reductions would achieve larger quantitative declines in loading. As a result, a large reduction requirement was applied for nonpoint sources generally.” ODF Comment: ODF is curious about which activities in this category have not implemented mercury minimization measures that initiated this comment in the draft TMDL, especially given the linkage to sediment reduction practices. Regardless, ODF under its Forest Practices Act (FPA) administration, Oregon Plan Voluntary measures promotion, and incentive programs has engaged in a robust program to reduce and minimize sediment delivery to waters of the state for decades. We look forward to working with DEQ to report on this program in the implementation plan.

9.2. Instream surrogate allocations [Section 10.3] and [Appendix H]

9.2.1. ODF Comment: These comments also cover Section 14.1.4. DEQ has already described the great level of uncertainty in determining anthropogenic versus natural sediment sources in the Willamette Basin, and the uncertainty in understanding the same for THg and MeHg. While we appreciate the level of detail provided on the THg and TSS analysis at the end of this document (Appendix H), moving to a surrogate of an already highly uncertain metric creates an unacceptable level of compounded uncertainty. The R2 values and scatter plots of log-transformed data suggest a weak correlation between THg and TSS. While adding a random effect (i.e., site) does increase the R2 value, the ecological/biochemical significance of including site as a factor in the model is unclear. Furthermore, DEQ decided to exclude non-detect data (65% of the samples) from the surrogate analysis, while similar analyses in other studies (Eckley et al. 2018) included non-detect data. For these reasons, ODF does not support the use of TSS as a surrogate for mercury concentrations at this time given our current uncertainty of this relationship. We recommend further exploration of this proposed surrogate as part of the monitoring in the implementation plan. We look forward to supporting you in this endeavor.

10. WATER QUALITY MANAGEMENT PLAN [SECTION 13]

10.1. Implementation plans [Section 13.1.1]

10.1.1. “Implementation plans must be posted to a publicly accessible website, unless the DMA does not have a website.” ODF Comment: For one-stop-shopping for users of information related to a TMDL, it would be more efficient for implementation plans to be posted on DEQs webpage under the relevant TMDL. It is not intuitive to look to a multitude of other agency and DMA websites for implementation plan information.

10.1.2. Proposed management strategies [Section 13.3]

10.1.2.1. “For some of the DMAs, DEQ included a list of management measures as an implementation or “good practice” baseline. The list is not intended to be comprehensive or prescriptive and DMAs and responsible persons may propose alternative approaches or management strategies.” ODF Comment: If the purpose of the Implementation Plan is to describe what the final implementation measures are, it is unclear what the purpose of this section is and could be confusing for readers. For example, if a reader sees a proposed practice for a DMA identified in this section but does not see it in the final implementation plan, the reader may perceive that the implementation plan is missing this element even if the DEQ agrees with the DMA that different management practice(s) will best achieve the outcome.

10.1.3. Oregon Department of Forestry [Section 13.3.1.5]

10.1.3.1. ODF Rules Related to Water Quality and Erosion Control [Table 13- 4]. ODF Comment: Recommend including Reforestation (OAR 629-610-0000 through 629-610-0090) and Afforestation rules (OAR 629-611- 0000 through 629-611-0020). ODF is also considering where and how to address fire prevention, managed fire, and wildfire as an aspect of this TMDL and is looking forward to having these discussions with DEQ.

10.1.3.2. Table Pollutant sources and example management strategies to address sediment and mercury and supporting section language [Table 13-5]. ODF Comment: The ODF section and this table provide a good summary of our strategies, thank you. Some additional recommendations:

10.1.3.2.1. Change references to “Prescriptive rules for forest operations” to “Prescriptive and outcome-based rules for forest operations” (row 1) to better reflect the different approaches used in the FPA. Some rules are indeed prescriptive but others describe an outcome that landowners and operators can use a variety of means to achieve.

10.1.3.2.2. Please add a bullet to row 4 (roads) with text: “Cease active road use during wet weather when roads have deep ruts or covered by a layer of mud that results in visible increases in stream turbidity (OAR 629-625-0700).

10.1.3.2.3. Change reference to “Partnership for Forestry Education (last row)”.

10.1.3.2.4. Reference to ODF Compliance Audits (rows 1 and 11). Thank you for including this important ODF program.

10.1.3.2.5. Hydrologically-connected roads, potentially unstable road prisms, and metrics informing at-risk stream crossings are already included in the compliance audit protocol. Road inventories are also included as an Oregon Plan voluntary measure. We look forward to discussions with DEQ about how existing programs can address these concerns as part of the implementation plan.

10.1.3.2.6. For tethered logging, ODF has already created guidance for landowners and operators for the information required to support a Plan for Alternate Practice (PFAP) to operate this new cutting, and sometimes yarding, system on steep slopes. We look forward to discussing with DEQ the information

provided in the PFAP and how this existing business process can address any concerns.

10.1.3.2.7. “Reports or other documents used for ODF TMDL reporting should be made available on a publically accessible website.” ODF comment: We respectfully recommend that it would be less confusing to the public consuming information about TMDLs that all supporting information be posted in a single location on the DEQ website rather than multiple agency websites.

10.1.4. Reservoir management [Section 13.3.1.22]

10.1.4.1. ODF Comment: ODF is interested in the recommended monitoring and calibration efforts in this section as a model for what monitoring would be of highest interest for DEQ in the non-federal forest environment. We look forward to having this discussion with DEQ.

10.1.5. Nonpoint Source DMAs and responsible persons [Section 13.4.1]

10.1.5.1. ODF Comment: ODF recognizes the 18 month timeline but also appreciates the expressed flexibility for setting specific timelines in the plan. ODF business reporting processes are currently focused on statewide or FPA administrative regions and districts: we do not currently have a mechanism to report on watershed basins. We look forward to discussions with DEQ on the most efficient and effective way to create reports that meet TMDL needs. ODF also appreciates the specific mention of adaptive management. Many of the items in the 2016 ODF Monitoring Strategy relate to issues that are likely significant for this TMDL. We look forward to discussing monitoring and adaptive management processes with DEQ for inclusion in the implementation plan. We see this same idea mentioned in the draft TMDL section “14.1.4 Evaluate implementation plans and progress”.

10.1.6. Timeline for attainment of water quality standards [Section 13.5]

10.1.6.1. ODF Comment: ODF appreciates the recognition of global mercury emissions and air deposition as the primary mercury source in Oregon. While we recognize the limited regulatory sphere that DEQ has for this issue, Oregon has an opportunity to create messaging and take action on a state, regional, and national level messaging about how mercury contamination is affecting our state, our citizens, its business sectors, and its environment. We are currently taking these steps with climate change, another global issue, and mercury contamination is strongly linked with climate change in many ways (e.g., coal emissions). ODF is looking forward to discussing with DEQ about messaging and other strategies to influence state, regional, national, and global actions to reduce mercury contamination over time.

10.1.6.2. ODF Comment: ODF also appreciates DEQs recognition that “...continued air emissions from global sources may offset these efforts”. ODF recommends that DEQ engage in monitoring to track and distinguish, by monitoring and modeling, in- versus out-of-state air contamination rates in order to understand what is driving mercury contamination rates in our state. If non-point implementation plans are conducted in a timely fashion, the failure of recovery may not be due to these sources but due to natural runoff and erosion from unavoidable air deposition.

10.1.6.3. ODF Comment: An ODF and DEQ collaborative approach to setting reasonable and attainable expectations for forest practices is the best way to avoid an adversarial approach. Developing a full accounting of the

mercury cycle in Oregon will provide the best available information for responding to this issue. In the absence of information, an adaptive management approach based on monitoring is an effective way to set reasonable expectations.

10.1.6.4. ODF Comment: We recommend that references to the sphere of the FPA relating to “private” forestlands be changed to “non-federal” forestlands to account for its jurisdiction over other public lands such as those owned by the state or counties.

10.1.7. Monitoring and evaluation [Section 13.6]

10.1.7.1. ODF Comment: ODF is curious about the “Assessment and Monitoring Strategy to Support Implementation of Mercury Total Maximum Daily Loads for the Willamette Basin” that DEQ is building with EPA. If this assessment will include expectations for non-federal forestlands, we look forward to being included in this conversation.

10.1.8. Costs and funding [Section 13.7]

10.1.8.1. Partial list of funding programs available in the Willamette Basin that may be used to support planning and implementation activities that benefit water quality. [Table 13-22] ODF Comments:

10.1.8.1.1. Please add ODF to the list of agencies involved in the EQIP Program.

10.1.8.1.2. Please add the Emergency Forest Restoration Program (EFRP). The EFRP helps the owners of non-industrial private forests restore forest health damaged by natural disasters. The EFRP does this by authorizing payments to owners of private forests to restore disaster damaged forests. This program is implemented by the local Farm Services Agency County Committee, along with ODF and likely others, for all disasters with the exceptions of drought and insect infestations. In the case of drought or an insect infestation, the national FSA office authorizes EFRP implementation.

10.1.9. Evaluate implementation plans and progress [Section 14.1.4]

10.1.9.1. “DEQ is proposing TSS as a surrogate measure for evaluating implementation of the allocations for the mainstem Willamette River and its tributaries. TSS will be used for evaluating the effectiveness of implementation plans.” ODF Comment: See ODF Comments on Section 10.3.

10.2. Dominance of atmospheric deposition of mercury [Section 14.2]

10.2.1. “...DEQ opted to allocate aggregated nonpoint source loads and point source wasteloads using the proportionality approach.” ODF Comment: In the absence of better information, we can understand this approach. It is recommended, however, that validation monitoring of this core assumption be incorporated into monitoring plans. ODF looks forward to discussing how this may be achieved.

References

Eckley, C. S., Eagles-Smith, C., Tate, M. T., Kowalski, B., Danehy, R., Johnson, S. L., & Krabbenhoft, D. P. (2018). Stream mercury export in response to contemporary timber harvesting methods (Pacific Coastal Mountains, Oregon, USA). *Environmental science & technology*, 52(4), 1971-1980

September 5, 2019

**55. Greg Geist,
Clackamas
County and
Water
Environment
Services,
Oregon**

Andrea Matzke Basin Coordinator
DEQ Water Quality Division
Oregon Department of Environmental Quality 700 NE Multnomah Street, Suite
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SENT VIA EMAIL

RE: Clackamas County and Water Environment Services comments regarding
the draft Willamette River Mercury Total Maximum Daily Load

Dear Ms. Matzke,

This letter is the comments by Clackamas County and Water Environment Services regarding the Dept. of Environmental Quality's (DEQ) July 3, 2019 draft mercury Total Maximum Daily Load (TMDL) for the Willamette River and its June 1, 2019 draft Technical Support document. We appreciate the opportunity to provide feedback and look forward to working with DEQ in addressing water quality challenges in this important water body. These are our concerns and comments:

General Comments:

- Section 7 on page #43 (“Loading capacity and excess load”): According to the draft TMDL, the river’s loading capacity – the amount of mercury the river can receive and still meet water quality standards – is 42 grams/day of total mercury. In table 6-7, “resurfacing groundwater” (springs, for example) is estimated to contribute far more total mercury: 60.6 grams/day. If the estimated amount of mercury discharged by resurfacing groundwater is verified to be correct as additional data is collected in the future, and if the amount of mercury in resurfacing groundwater is naturally occurring, and not the result of human activity, then the river’s loading capacity for total mercury will never be met simply due to discharges of mercury in resurfacing groundwater. This would be true even if every property owner, every DMA, and every point source discharger somehow reduce their discharge of mercury to zero. Even if everyone does their part to reduce/control mercury in the future, natural erosion of soils will contribute more mercury, and volcanic eruptions and forest fires will cause even more mercury to be discharged into the river. This apparent fact – that the river’s loading capacity for total mercury will probably never be met no matter what the people of Oregon do – should be featured in a more prominent location in the TMDL, including but not limited to the Executive Summary on page #11. Oregonians should all be taking reasonable and cost-effective steps to reduce and control our discharges of mercury, since this will result in better public health and environmental outcomes. But before the TMDL is finalized, acknowledgement of the river’s loading capacity

and the river's natural sources of mercury should be used by DEQ to set a more realistic, attainable goal in the TMDL for future mercury control and reduction in the watershed.

- Section 9.4.1.2 on pages #55-57 (“Industrial Wastewater Permits”): This section describes evaluations made of existing industrial wastewater permits. Table 9-4 does not list the Blue Heron Paper Company NPDES permit (Blue Heron Permit) and associated allocation. Prior to its expiration, the Blue Heron Paper Company duly filed an application for renewal of the Blue Heron Permit as required. Water Environment Services (as successor to Clackamas County Service District No. 1 and the Tri-City Service District) purchased the treatment lagoon, outfall, and transferred the Blue Heron Permit into its ownership in 2012 after discussion with DEQ regarding the utilization of the Blue Heron Permit to support WES’ operational and regulatory needs.

WES subsequently has filed, as part of the permit renewal application for the Tri City Plant NPDES permit, a request for consideration to consolidate the Blue Heron Permit and the Tri-City Permit, which includes all TMDL allocations. DEQ has not taken action on either permits, primarily due to uncertainty around temperature TMDL issues, and both are administratively extended at this time. Until such time as DEQ takes official action with respect to the Blue Heron Permit, it must be listed as an active permit that may discharge into the Willamette River and receive and retain all appropriate TMDL allocations, including mercury. WES’ acquisition, care, maintenance, and commitment to remediate the brownfield portions of the site as reflected in a prospective purchaser agreement with DEQ is premised on the continued viability of the Blue Heron Permit and consistent, legal treatment under the Clean Water Act. The Blue Heron Permit should be listed as an active permit and should receive a waste load allocation under the Willamette River Mercury TMDL the same as any other active discharger of this character.

We further note that the TMDL document lists the West Linn Paper Company permit as not operating, but published reports state that the mill is restarting and the permit would be active and discharges continuing. The current state of activity or not of a permit does not remove an obligation by DEQ to make a waste load allocation to that permit under the TMDL. Only after DEQ takes official action to terminate an NPDES permit may it not consider such permits and assign waste load allocations under a TMDL.

- Northern Pikeminnow: We continue to have concerns with the use of the Northern Pikeminnow as the target fish species. The water quality standard for mercury is based on protection of human health and assumes a 175 gram/day consumption rate. How many people ever eat Northern Pikeminnow? For the small number of people who ever eat this fish, does DEQ know of anyone who eats 175 grams/day over any substantial period of time? If a small population of Oregonians do eat 175 grams/day over any substantial period of time, we would support the choice of this fish for the target fish species. If not, using the Northern Pikeminnow as the target fish species establishes an unrealistic goal for the TMDL. We recommend the use of more widely consumed fish to provide a more meaningful goal for future in-stream mercury concentrations. Furthermore, by selecting the Northern Pikeminnow as the target fish, the resulting message the

general public might hear is that fish in the Willamette River are highly contaminated and should not be consumed, when this is not necessarily the case. The public should be warned about eating Northern Pikeminnow and other species of fish which tend to have more mercury, but some species of resident fish (such as trout) tend to have less mercury

in their tissues. Fish can be a healthy food choice. If the final TMDL sends a message which discourages the eating of all species of resident fish caught in the Willamette River, whether this is done intentionally or unintentionally, this would be a step back from attaining/enjoying one of the river's designated beneficial uses – fishing – as envisioned by the Clean Water Act.

- Section 13.3.1.11.1 on page #96 (“Nonpoint Source Stormwater Management Requirements for MS4 Permit Holders”): In the draft Water Quality Management Plan, DEQ expects Clackamas County, a Phase I MS4 community, to implement the 6 “stormwater control measures” (SCM) outside of its MS4-permitted area to control discharges of mercury in a large rural area (but not in areas regulated by the MS4 permit, inside cities, on state-owned and federal lands, in agricultural areas, or in areas with private timber land). Compared to the existing requirements, this is a significant expansion. For example, one of the SCMs, Construction Site Runoff Control, would obligate the County to implement measures to control erosion at privately owned construction sites in this large geographic area if the land area disturbed is over ½ an acre but less than one acre. The draft WQMP says the required 6 SCMs “...generally mirror...” the 6 SCMs in the March 2019 Phase II MS4 Permit. We believe it is inappropriate to apply this significant new regulatory burden through the TMDL revision process, which is akin to entering a building through a “back door”. If DEQ wants communities to implement a stormwater management program in their rural areas which includes the 6 SCMs, DEQ should ask these communities to apply for and obtain a Phase II MS4 Permit and/or make such a proposed change part of the MS4 permitting process. We note that the TMDL standard is inconsistent with even existing MS4 language, since it does not reference or clearly state that the MS4 permit’s maximum extent practicable (MEP) standard would apply. A TMDL may not incorporate by reference a new jurisdictional standard that should be promulgated through the MS4 permit issuance process, and further may not impose such a standard inconsistent with the performance standards of such work.

When communities are creating or updating their TMDL Implementation Plans, we recommend that a suite of options (such as erosion control at construction sites) be made available for communities to consider in developing or expanding their programs. Individual communities could then evaluate the options provided and develop a practicable program that reflects their financial resources, their responsibilities and their capabilities which are both consistent with the character and usage of the areas under consideration and provide significant water quality benefit. When providing this flexibility, the TMDL should describe the options generally without the specific triggers for construction acreage requirements, post construction management practices requirements, etc. The community’s mercury control/reduction program, as described in their TMDL Implementation Plan, would then be customized by the community for their unique circumstances, such

as through the use of a rural building/development standard for stormwater management in a rural residential area in a rural portion of a county.

- Section 13.3.2.2.1 on page #117 (“MS4”): This section says renewed Phase I MS4 permits will need to include a requirement for the collection of stormwater samples for total mercury. This language is too prescriptive and should be revised. Smaller Phase I MS4 communities, such as the City of Rivergrove (population 371) should be specifically exempted from this requirement in the final WQMP because the collection and analysis of samples for total mercury is very expensive, clearly exceeding the Maximum Extent Practicable (MEP) performance standard in

MS4 Permits. This is a continuing problem arising from the inclusion of small communities in the lumped MS4 Phase I permits in Clackamas County.

Other proposed requirements for renewed Phase I MS4 permits are also listed here. For example, the draft WQMP specifies that a “mercury minimization section within the Stormwater Management strategy” shall be developed and submitted to DEQ. Did DEQ intend to say a mercury minimization section should be added to permit holders’ Stormwater Management Plans (SWMP)? If so, we have extensive experience with SWMPs, since WES and our partners, including Clackamas County and the cities of Rivergrove and Happy Valley, have held a Phase I MS4 permit since 1995. We believe it would be counter-productive to add a complete new, unnecessary, and almost certainly unwieldy section to our SWMPs. We believe a better approach for accomplishing this objective would be to generate a written review our MS4 Permit SWMP’s BMPs (Best Management Practices) to confirm that we’re continuing to reduce mercury in our MS4’s discharges to the Maximum Extent Practicable (MEP). This written review would be submitted to DEQ, and if gaps are identified, potential solutions include: I) insertion of one or more new BMPs in an updated SWMP, or II) one or more existing BMPs could be proposed for revision in an updated SWMP. And finally, while we believe it is appropriate for the WQMP to suggest some general items for the DEQ’s MS4 Permit writer to consider when the renewed Phase I MS4 Permit is written, the placement of specific future MS4 Permit requirements in the WQMP is inappropriate.

- Urban vs Rural Streams: In the TMDL, it is important to be clear and consistent when using the terms urban and rural to describe streams and runoff. The draft WQMP incorrectly refers to “urban streams” when it is focused on a discussion of rural areas. And rural stormwater runoff is consistently and incorrectly referred to as urban runoff, and assumed to be of similar quality when data and published reports indicate otherwise.

Our other, more specific concerns and comments are listed below:

- Table 1-3 on page #20 (“Land Use Areas...”): This table contains a mixture of land uses and land cover (i.e. shrub land), yet the table’s title includes the term “Land Use”. If the title is retained, please remove land cover types, such as shrub land, and add land uses which were missed, such as “Rural Residential”. Another option is to change the name of the table to “Land Cover” or a similar term. It is unclear what the intention of this section is as written.

- Section 6.1.4.2 on page #40 (“Soil”): This section says “The method used to account for the mercury level from soils was to estimate potency factors for use in the Mass Balance Model”. Table 6-6 provides the total mercury potency factors which were used, and the TMDL says they varied with geology, soil properties, and land use type, but after careful reading of this section, our understanding of potency factors is still incomplete. Please provide a definition for potency factor in the final TMDL. And if potency factors are addressed in the TMDL’s draft Technical Support Document, then it would be helpful to refer the reader to the applicable section and/or page number.

- Table 6-7 on page #42 (“Estimate total mercury loads for source categories...”): The “Point Sources” portion of the table includes a row for the estimated total load of mercury from NPDES-permitted MS4s. If the data in this row also includes the estimated total load of mercury from facilities and properties with the other types of stormwater discharge permits (such 1200-

Z, 1200-A, and 1200-C), then please clearly state this fact here, or include the loads for these other types of permits on separate rows in the table. Note: On page #58, the TMDL says the modeled mercury load from all types of stormwater permits were combined into a single category. Therefore our assumption is that this section is incomplete.

- Table 9-5 on page #58 (“Summary of MS4 Permits”): In the portion of this table which is devoted to the Clackamas County MS4 permit, CCSD#1 and the SWMACC are included as co- permittees. Please remove SWMACC and CCSD#1 the replace them with Water Environment Services as the single permit holder, per our permit transfer notices filed in 2017 and 2018, respectively.

- Table 10-1 on page #62 (“Allocations”): Similar to Table 6-7, the table includes a row for “NPDES MS4 Stormwater Point Source Discharges”. If the data in this row also includes the estimated total load of mercury from facilities and properties with the other types of stormwater discharge permits (such 1200-Z, 1200-A, and 1200-C), please clearly state this fact here, or include the loads for these other types of permits on separate rows in the table. Note: On page #58, the TMDL says the modeled mercury load from all types of stormwater permits were combined into a single category. Therefore our assumption is that this section is incomplete.

- Section 12 on page #72 (“Reserve Capacity”): Reserve capacity is an allocation for potential increases in mercury loads from new or expanded sources. This section says reserve capacity may be granted to NPDES permitted point sources and/or nonpoint source designated management agencies and responsible parties. It is not stated how the reserve capacity would be made available for new or expanded sources in a TMDL that includes sector-specific percent reduction allocations. Please describe how the reserve capacity would be available for this purpose. Please also confirm that the groundwater comment provided above will not be determined as utilizing the entirety of the reserve capacity.

- Section 13.3.1.4 on page #82 (“Oregon Department of Agriculture”): In the section titled “Regulatory Implementation through Agricultural Water Quality

Management Area Rules”, Strategic Implementation Areas (SIA) are portrayed as being “...a proactive approach to identifying specific agricultural activities in a specific watershed that are violating ODA rules, as well as legacy conditions that are adversely affecting water quality, and identifying conservation actions that will help achieve water quality goals”. We believe the establishment of SIAs in 2014 was prudent. But the total acreage contained within all of the SIAs in the Willamette River’s watershed is small compared to the total acreage of all agricultural lands in the watershed. What is the State of Oregon’s plan for implementing a proactive regulatory approach for water quality improvement on the other agricultural lands in the Willamette River’s watershed? Please also confirm that MS4 permit holders will not be assigned this responsibility, as it should be the State of Oregon which is the default designated management agency for this area.

- Section 13.3.1.11 (“Local Government: Cities and Counties”): These requirements would be expected to significantly raise the cost of roadway projects in rural areas, which are primarily served by drainage ditches, as narrow road rights-of-way would lead to a need to purchase adjacent land to construct water quality treatment and flow control facilities. Examples include stormwater retention or treatment ponds and swales. Additional funding would then need to

be obtained to operate and maintain these facilities after they’re constructed. Further, for counties such as ours, with hundreds of miles of ditch networks in the rural areas outside of the urban growth boundary, the requirement for a stormwater map and digital inventory of the drainage system will be a costly and impracticable effort. This requirement should be removed.

- Section 13.3 on page #78 (“Proposed Management Strategies...”): On page #78 in the WQMP, DEQ mentions the 2006 Willamette TMDL WQMP for the first time in the updated mercury WQMP. We believe the updated mercury WQMP should mention the existing 2006 WQMP on its first page (page #73). In addition, the 2006 Willamette TMDL WQMP applies to several pollutants, so it will still be in effect for E. coli, water temperature, etc. even after the new mercury WQMP is in effect. The “public comment draft” mercury WQMP appears to fail to explain to the reader that the 2006 WQMP will continue to be in effect for these other pollutants; this omission should be rectified to avoid confusion.

- Section 13.3.1.11.1 on page #96 (“Nonpoint Source Stormwater Management Requirements for MS4 Permit Holders”): We have one more comment about this section of the TMDL. WES and our partners provide stormwater management services in WES’ retail urban service area. A portion of this area drains to drywells we own/operate and these areas are regulated by a DEQ- issued Stormwater WPCF (Water Pollution Control Facilities) permit. Other portions of this area drain into the surface-discharging storm sewer system we own/operate (the MS4) and these areas are regulated by the DEQ-issued MS4 permit. But the remaining portion of this area isn’t served by any storm sewer system we own or operate; in these geographic areas, we have little or no authority to control discharges from private property into creeks, wetlands or rivers, or into privately owned injection devices, such as drywells. Note that much of our existing authority is derived from the storm sewer systems we own and/or

operate. We believe the TMDL should be revised to clearly state that the State of Oregon will continue to be legally responsible for regulating those discharges which flow straight to a surface water body from private property.

The TMDL says our TMDL Implementation Plan "...must include management strategies to reduce runoff and erosion that discharge directly to waterbodies." This sentence should be revised to state that DMAs are encouraged to voluntarily implement management strategies to reduce runoff and erosion that discharge directly to waterbodies. In these instances, we continue to be willing and able to provide education and technical assistance consistent with our jurisdictional boundaries, and we'll continue to refer property/business owners to DEQ or another state agency as directed when the services we offer aren't able to be sufficiently protective of surface water quality.

- Table 13.12 on page #101: This table lists examples of the U.S. Bureau of Land Management's BMPs. This table doesn't have a BMP for the protection of – or for the minimization of adverse impact to – riparian areas, but we believe it would be appropriate to include one. The U.S. Forest Service's table has a BMP which says: "...prescribe adequate no-harvest buffers on both perennial and intermittent streams within treatment areas". In the Willamette River's watershed, the BLM's land is typically forested, so the inclusion of a similar riparian area BMP for timber land management-related activity would be prudent.

- Section 13.3.3.1 on page #118 ("Other DEQ Mercury Reduction Programs..."): The section in the draft WQMP titled "Air Emissions Mercury Reductions" is very short – only one sentence – although four paragraphs about air emissions are provided in section 9.1 of the TMDL, and a list of stationary sources of mercury discharged into the air is found in Appendix G. Since "...atmospheric deposition is the major source of mercury" to the river (see page #116), more information should be provided in the WQMP to describe the work DEQ is and will be doing to reduce the amount of mercury which is discharged into the air from sources within Oregon.

- Section 13.3.3.1 on page #119 ("State Legislation on Mercury in Products"): This section in the draft WQMP provides a list of successful historic mercury reduction legislation, including the requirement in 2007 for dental offices to install dental amalgam separators to reduce their discharge of mercury into sanitary sewer systems and septic systems. Unfortunately, mercury can still be found in some of the products which are purchased today by businesses and residents in Oregon (in certain foods or drinks, for example. When mercury is found in food and drink, it is a contaminant or impurity). To continue with the food and drink example, in the future, if these products contained less mercury, or no mercury at all, we'd expect to see a reduced amount of mercury being discharged into sanitary sewer systems from sinks, toilets, and dishwashing machines. Has the State of Oregon considered any additional uses of its existing administrative and/or legislative authority to set allowable amounts of mercury in selected products – including food and drinks – purchased by businesses and residents in Oregon? The prudent use of this existing authority would eventually translate into cost-effective, substantial reductions of mercury in the Willamette River's fish. We are hoping for some assurance that the State

will not consider its part in mercury reduction ended with the adoption of this TMDL.

- Section 13.3.2.2 on page #118 (“Stormwater General Permits...”): 1200-Z permits are addressed in this section. At the present time, 1200-Z permit holders in the Willamette River watershed must monitor their stormwater for mercury two times per year, since it is an “impairment pollutant”. Impairment pollutants apply to discharges to an impaired water without a TMDL for the pollutant. After the mercury TMDL has been finalized, will 1200-Z permit holders be allowed to discontinue mercury monitoring of their stormwater? If a larger and ongoing set of mercury data from industrial facilities will be valuable, we encourage the DEQ to continue to require 1200-Z permit holders to monitor their stormwater for mercury after the TMDL has been issued and approved.

Also, since 1200-Z permitted facilities in the Willamette River’s watershed have been monitoring their stormwater for the presence of total mercury, we have this question: Was this set of data used to inform the development of this draft mercury TMDL?

- Section 13.4.1 on page #121 (“Nonpoint Source DMAs...”): The this section says “Each nonpoint source DMA and responsible person will submit a TMDL implementation plan that includes...”. This section should be re-worded to acknowledge that many DMAs will be submitting a revised TMDL implementation plan, not a new plan, in response to the revised mercury TMDL. We, and many other DMAs in the Willamette river watershed, have been implementing DEQ-approved mercury TMDL implementation plans for more than ten years.

- Section 13.4.2 on page #122 (“Point Sources”): The title of this section should be changed, since much of the content in this section’s Table 13-20 pertains to non-point sources of water pollution.

- Appendix E includes a list of Designated Management Agencies (DMA) and responsible persons. Although Clackamas County is on this list, Water Environment Services, which is the ORS 190 municipal partnership which recently assumed the responsibilities and permits of Clackamas County Service District No. 1 and the Surface Water Management Agency of Clackamas County – is not. Please add Water Environment Services to the list of DMAs in Appendix E and remove, if necessary, CCSD#1 and SWMACC.

- Also in Appendix E, the location of the “Columbia County Drainage District #1” is said to be in Clackamas County. Please provide the correct location for this district.

- Water quality trading. If a cost-effective trading opportunity is identified by a NPDES permit holder, would the DEQ’s rules/policy allow the trade to be approved? Removal of mercury-rich sediments from a creek or river downstream from an old, abandoned mine could be an example of a cost-effective trading opportunity, as would be inter-permit trading to optimize investments in such work. If yes, please so state. If no, does DEQ plan to revise this rule or policy to allow mercury trading in the future?

Draft Technical Support Document

- Table 5-9 on page #89 contains outdated, or possibly incorrect, total mercury concentration data for WES' Kellogg Creek Water Resource Recovery Facility (Kellogg Creek WRRF) and Tri-City Water Pollution Control Plant (Tri-City WPCP). Note that incorrect names for these facilities are used in this table; see comment below. Table 5-9's average total mercury concentration for the Kellogg Creek WRRF is 6.2 ng/L, but since Feb. 2015, this facility's average total mercury concentration has actually been much lower: 2.7 ng/L. And table 5-9's average total mercury concentration for the Tri-City WPCP is 5.9 ng/L, but the facility's average total mercury concentration has also actually been much lower since Feb. 2015: 2.6 ng/L. Please include this most recent data when fine-tuning the draft TMDL prior to its issuance.
- In table 5-9 on page #89, incorrect names for the WES' Kellogg Creek WRRF (referred to as "Clackamas County Service District #1" in the table) and WES' Tri-City WPCP (referred to as "Tri-City Service District" in the table) are provided. Please provide the correct names for these facilities in the updated table.
- In table 5-8 on page #87, incorrect ownership of WES' Kellogg Creek WRRF and WES' Tri-City WPCP is provided. The previous owners – Clackamas County Service District No. 1 and the Tri-City Service District – are listed in this table. The current owner of both facilities is Water Environment Services.
- Also in table 5-8 on page #87, the row for WES' Tri-City WPCP includes an incorrect HUC 8 waterbody. Although this facility is located in the Clackamas River watershed, treated effluent from the Tri-City WPCP is discharged directly into the Willamette River. Please correct this error.

In closing, as holders of several NPDES permits which continue to tightly regulate any discharges which contain mercury, we want to remind DEQ that the vast majority of the mercury discharged into the river and tributaries is coming from non-point sources, such as erosion of soil. There is apparently some reason to believe, based on the technical work published by DEQ, that groundwater and natural sources are contributing more than the alleged total maximum daily load goal. We urge the DEQ and other state agencies, including the Dept. of Agriculture, to focus their TMDL implementation efforts on reducing these much larger sources of mercury. Even if smaller sources of mercury like MS4s, factories, and wastewater treatment plants were to somehow eliminate their discharges of mercury, this would only yield a small reduction in concentrations of methylmercury in the tissue of fish which live in the river and its tributaries. The amount of mercury in resident fish tissue in the Willamette River watershed will not be substantially reduced until after the largest sources of mercury have been controlled.

Sincerely,

Greg Geist
Water Environment Services Director
150 Beaver Creek Rd. Oregon City, OR 97045 ggeist@clackamas.us

September 5, 2019

56. **Lee
Folliard,
Oregon/Was
hington
Bureau of
Land
Managemen
t, Oregon**

RE: Oregon/Washington Bureau of Land Management Comments to the Oregon Department of Environmental Quality on the Draft Water Quality Management Plan for the Willamette Basin Mercury Total Maximum Daily Load.

The Bureau of Land Management (BLM) would like to thank the Oregon Department of Environmental Quality (ODEQ) and the Environmental Protection Agency for the opportunity to comment on the Water Quality Management Plan for the Willamette Basin Mercury Total Maximum Daily Load (TMDL). The BLM's participation on the Willamette Basin Mercury TMDL Advisory Committee over the past two years has provided our agency with the information and context to help inform the development of this document and to continue our work with the ODEQ to maintain and improve water quality in the Willamette Basin.

The BLM administers public lands in the Willamette Basin for multiple uses, including timber production, recreation, mining, and habitat management. The Resource Management Plans for Western Oregon (2016) incorporated new science, policies, and technology to protect water resources. Our rigorous environmental planning process incorporates into the design of every action measures that avoid or mitigate pollutants from entering the waters of the State of Oregon. The BLM implements a suite of site-specific and action-specific best management practices with each action to protect water resources. The BLM follows established processes to monitor project implementation and the efficacy of our protections to ensure all actions are implemented to the designed standards. The measures that the BLM takes for actions planned under the Resource Management Plans for Western Oregon (2016) greatly reduces the probability of sediment delivery to streams.

The BLM supports actions that improve water quality and reduce mercury in fish tissue. In general, the BLM supports this Water Quality Management Plan, however we have concerns about the additive assumptions used in the analyses and the subsequent uncertainty from which conclusions are drawn. Mercury methylation is a product of complex processes that move and transform mercury in the environment. Most of the mercury in the Willamette Basin's forested landscape is derived from air deposition. Tetra-tech's mass balance, mercury translator, and food web models do little to characterize exactly how and where inorganic mercury is methylated and the pathways for bioaccumulation. The connection between BLM management actions and methylmercury fish tissue concentrations is not clear from the modeling effort that serves as the foundation for the load allocations in this document.

The BLM is committed to designing actions consistent with the Resource Management Plans for Western Oregon (2016) while working with the ODEQ and the partner agencies of the Willamette Basin to maintain and improve water quality. We understand how difficult this process was for all involved, and we look forward to working with the ODEQ in the coming months on the Water Quality Restoration Plan for the Willamette Basin Mercury TMDL.

For questions or follow-up on these comments, please contact: Mike Brown –
BLM State Office Soil, Water & Air Program Lead, mebrown@blm.gov, (503-
808-6662).

To the Oregon DEQ:

**57. Karen
Darnell ,
StreamSaver
s**

StreamSavers submits this letter in opposition of the proposed changes to watershed above Dorena Lake and request more time be allowed in the decision-making process.
Let's take a closer look.

We respectfully oppose the banning of any dredge activity in mercury laden streams at this time and ask that a "mercury remediation via suction dredge" study be commissioned in the Bohemia District.

Regards,
Karen Darnell
President
StreamSavers

September 3, 2019

58. Meredith Nagely, Associated Oregon Hazelnut Industries, Oregon

Andrea Matzke, Basin Coordinator
Oregon Department of Environmental Quality 700 NE Multnomah Street, Suite 600
Portland, Oregon 97232 WillametteMercuryTMDL@deq .state .or.us

Re: Comments regarding the Revised Willamette Basin Mercury TMDL, Draft for Public Comment

Dear Ms. Matzke:

The Associated Oregon Hazelnut Industries ("AOHI") respectfully submit comments on the Willamette Mercury TMDL. AOHI represents the 800 growers and processors of hazelnuts in Oregon. Oregon is home to 99.9% of the U.S. hazelnut industry and acreage has increased from 28,000 to over 80,000 in the last ten years. The industry is positioned to be one of the largest in Oregon when the newly planted trees reach full production . During the past five years, the industry has contributed nearly 250 million dollars to the economy of Oregon annually.

Agriculture has always been proactive about protecting water quality on our lands-one of the largest land uses in the Willamette Valley . Our state was one of the first to have a robust nonpoint source pollution program, and today growers engage proactively in helping to implement the Agricultural Water Quality Management Program.

The Willamette Mercury TMDL is clear that agriculture is not the cause of mercury in the Willamette Basin. Rather, atmospheric deposition of mercury is the dominant source of mercury. We are concerned that impossibly large mercury reductions have been placed on Oregon agriculture, given that the main source of mercury is outside of the State's control. With this concern in mind, we raise the following concerns with modeling and load reductions in the Willamette Mercury TMDL.

- Load allocation modeling is based on uncertainty. Mercury wasteload allocations are based on six separate and contested computer models, each with accompanying uncertainties. Additionally, the 'mass balance model' has compounded

uncertainties because it utilizes two models' outputs as the inputs. This layering of uncertain modeling injects significant uncertainty into the load allocations.

- The role of atmospheric deposition is unclear. The TMDL allocations depend on the categorization of different sources (Table 10-1). In this categorization, atmospheric deposition is double counted as part of both the "General Nonpoint Source and Background" and as its own separate category. Additionally, the TMDL lacks clarity on atmospheric deposition of mercury and the impact that foreign sources of mercury are having on our waterways. Section 14.2 of the TMDL document states clearly that atmospheric deposition of mercury is the dominant source of mercury reaching Willamette Basin streams and that air emissions from Oregon are small relative to global sources.

AOHI also reiterates the technical comments from the letter submitted by the Oregon Farm Bureau, Oregon Forest & Industries Council, and Oregon Association of Nurseries.

Thank you for the opportunity to comment .

Sincerely,

Meredith Nagely
Manager, Oregon Hazelnut Industry Office

August 29, 2019

**59. Susan
Smith,
Oregon
Association
of Clean
Water
Agencies
(ACWA),
Oregon**

Andrea Matzke Basin Coordinator
DEQ Water Quality Division
Oregon Department of Environmental Quality 700 NE Multnomah Street, Suite
600

Sent via email to: MATZKE.Andrea@deg.state.or.us and
WillametteMercuryTMDL@deq.state.or.us

Subject: Comments regarding the Draft Willamette Basin Mercury Total
Maximum Daily Load (TMDL)

Dear Andrea:

The Oregon Association of Clean Water Agencies (ACWA) appreciates the opportunity to provide comments on the public review draft of the Willamette Basin Mercury TMDL dated July 3, 2019 (TMDL), and the Technical Support document dated June 1, 2019. ACWA is a not-for-profit organization of Oregon's wastewater treatment and stormwater management utilities, along with associated professional consulting firms, which are dedicated to protecting and enhancing Oregon's water quality. Our members provide wastewater and stormwater services to over 2.5 million Oregonians, serving over 65% of Oregon's homes and businesses.

Throughout the Advisory Committee process, ACWA representatives submitted comment letters on earlier drafts of the Technical Support document and the Water Quality Management Plan (WQMP). ACWA appreciates the resulting improvements that have been made to the documents over time. This comment letter includes new comments on the public review documents and reiterates some of our previous comments for the record of public comment on this TMDL. ACWA's detailed comments are provided below.

Public Review Draft Willamette Basin Mercury TMDL:

Section 13.3.1.11 Local Government: Cities and Counties: One of our most significant concerns with the TMDL is the extension of the six minimum stormwater control measures to city and county areas outside of areas already covered by MS4 NPDES permits, and/or outside of areas already covered by other designated management agencies (DMAs). This requirement is especially significant for large counties with broad geographic jurisdiction. Counties covering broad geographic areas will need to coordinate on the six minimum measures within the urban growth boundaries of multiple cities and towns with a range of existing programs (or no programs at all, currently). This presents various practical implementation challenges that take time to work through. Also, implementation of the six minimum measures in counties with large geographic areas essentially imposes an urban stormwater management program on largely rurally zoned lands (e.g., rural residential, rural commercial/industrial, etc.). The six minimum measures that are the basis of the MS4 Phase II NPDES permitting program were originally written and intended for managing runoff from urbanized areas. The imposition of these measures in a rural context lacks scientific support

and poses a significant risk of unintended consequences and counterproductive actions. We do not think it is appropriate to use the Mercury TMDL as a mechanism for obtaining what is essentially MS4 Phase II NPDES permit coverage watershed wide. Given the largely rural extent of these areas, and the range of actions required to implement the six minimum measures, significant time and resources would be necessary to develop and implement stormwater programs for runoff from rural lands without significant impact on or benefits for water quality.

Additionally, the specificity included in the six minimum measures with regards to construction stormwater requirements, post construction requirements, and design standards does not enable smaller cities and counties to develop a program that reflects their local capabilities and needs. For example, overseeing activities such as the construction and maintenance of stormwater facilities for individual lots that may require county staff to travel as far as 100 miles one way is not practicable or cost-effective. In addition, the post-construction program could lead to inconsistencies if it results in developers having to build stormwater facilities in rural areas adjacent to cities where similar standards are absent if the city population is less than 5,000. These requirements could significantly raise the cost of roadway projects in rural areas, that are primarily served by drainage ditches, as tight rights-of-way would lead to a need to purchase adjacent agricultural land to construct water quality treatment and flow control facilities. Further, for counties with hundreds of miles of ditch networks in the rural areas outside of the urban growth boundary, the requirement for a stormwater map and digital inventory of the drainage system will be a costly and impracticable effort. We recommend that the minimum measures be tailored to the rural, expansive, and isolated nature of these lands, and listed as a suite of options that are available for smaller cities and counties to consider in developing their programs.

Individual jurisdictions can then evaluate the options and develop a practicable program that reflects their jurisdictional responsibilities and capabilities that are both consistent with the character and usage of the areas under consideration and will provide true benefits to water quality. Additionally, we recommend that the TMDL describe the minimum measures generally without the specific triggers for construction acreage requirements, post construction management practices requirements, and design standards to allow individual jurisdictions to develop a practicable program that is based on their local capabilities and needs. These programs could focus on certain types of development practices such as rural industrial if the DMA concludes it is an effective and practicable management strategy. This approach would be consistent with the maximum extent practicable standard that is integral to the municipal stormwater program.

We also think it is important in this section to be clear and consistent when using the terms urban and rural to describe streams and runoff. This section incorrectly refers to "urban streams" when it is focused on a discussion of rural areas. In the WQMP in general, rural runoff is consistently and incorrectly referred to as urban runoff and assumed to be of similar quality when data and published reports indicate otherwise.

Section 11. Margin of Safety: We reiterate our request to quantitatively estimate the margin of safety that is incorporated into this TMDL as a result of all the

various conservative modeling assumptions. At a minimum, a table should be provided to show where each conservative modeling assumption was made that contributes to the total margin of safety. It is very important for DEQ, stakeholders and the public to understand the significant conservative assumptions being used in the TMDL development process. At a minimum, for the following three areas of the analyses, we quantitatively estimated the margin of safety and suggest this quantification is included in the document.

- If the next most conservative fish species was used as the target (Largemouth Bass), the target instream total mercury concentration would be approximately 58% higher than the target concentration based on use of the Northern Pike Minnow (Table 4-4, page 56).
- If the average value was used as opposed to the median value, the target instream concentration would be approximately 68% higher. (Table 4-4, page 56 for the NPM).
- The TMDL analysis used total mercury concentration in fish tissue rather than the methylmercury in the criterion. As stated in the TMDL document on pages 70-71, "The total mercury in fish is composed of 95 percent or greater methylmercury in higher trophic level piscivores (USEPA, 2000), therefore using total mercury concentration in fish tissue rather than methylmercury increases the margin of safety because the methylmercury concentration will be slightly less than the total mercury concentration. "

Cumulatively, these assumptions decrease the allowable concentrations by a factor of over 3.5 times (based on using the mean from the next most conservative fish species). It is essential for the public to know this when given the opportunity to evaluate the TMDL.

Section 7.1 Loading Capacity: This section, page 43, states that the loading capacity for the Willamette Basin is 42 grams/day of total mercury, and then on page 42, it shows that "resurfacing groundwater" is estimated to contribute a load of 60.6 grams/day. This groundwater load is lumped in with the General Nonpoint Source Sector and given an 88% reduction for a load allocation in Table 10-1 on page 62.

However, resurfacing groundwater is considered to be a non-anthropogenic source of mercury. The Water Quality Management Plan (Section 13) does not address how any mercury reduction would be achieved for this source. As a result, based on the current data assumptions, the loading capacity for total mercury in the Willamette Basin would never be met. This would be true even if every property owner and DMA reduced their discharges of mercury to zero. Currently, there is limited understanding of natural and anthropogenic mercury loads and therefore, the TMDL should be focused on realistic, attainable goals for mercury reduction. For transparency, this inability to attain the mercury loading capacity should be featured in a more prominent location in the TMDL, including in the Executive Summary on page 11 and in Section 14 regarding reasonable assurance.

Section 13.3.2.2.1 MS4 Phase I Permittees: On page 117 of the TMDL document, please change the requirement to include the mercury minimization section within the Stormwater Management strategy (Note: we assume DEQ is referring to MS4 Stormwater Management Plans (SWMPs) when the TMDL

document calls out a Stormwater Management strategy) to instead require a stand-alone submittal. In addition, for the second sub-bullet under the first bullet, we are requesting that this be changed to require an effectiveness evaluation strategy as opposed to an effectiveness monitoring strategy. That would enable us to discuss this further with DEQ during the Phase I permit renewal process and consider other measures to evaluate effectiveness such as literature reviews and program evaluations.

For the second bullet, the words "beginning with the third year annual report" should be removed. The MS4 Phase I permittees are already implementing these actions and reporting on them in each of their annual reports. The last bullet in this section lists a requirement for submittal of a pollutant load reduction evaluation (PLRE), and a wasteload allocation attainment assessment (WLAAA). There is acknowledgement in the third bullet that there aren't enough data to develop benchmarks. However, that same data would be needed to conduct both the PLRE and the WLAAA analyses. Therefore, these analyses should be treated similarly to any requirement to develop benchmarks. Specific proposed revisions are presented below in strikeout/underline mode.

MS4 Phase I

Upon permit renewal, each MS4 Phase I permit will include the following requirements:

- Develop and submit a mercury minimization section within the Stormwater Management strategy with the second annual report of the renewed permit term, that includes:
 - o Evaluation of current actions and their relative effectiveness of reducing the amount of solids discharged into the MS4 system (similar to the actions currently required in Schedule A of the permits); and
 - o An effectiveness monitoring evaluation strategy to inform implementation of future control measures.
- Continued implementation of the actions described in the stormwater management plan that are effective for mercury reduction, along with documentation in each subsequent annual report (beginning with the third year annual report) of implementation progress.
- An analysis of the effectiveness of the actions taken and qualitative pollutant load reductions achieved in the fourth annual report. Due to data limitations, wasteload allocation attainment analysis, pollutant load reduction evaluation, and mercury benchmarks for mercury are not applicable in the first permit cycle after the TMDL is finalized.
- Collection of paired total mercury and total suspended solids samples.
- Submittal of monitoring data in the appropriate DEQ data submission template, pollutant load reduction evaluation and wasteload allocation attainment analysis.

Section 10. Allocations: Table 10-1: This table summarizes allocations for the various sectors. This table will likely be a key reference in interpreting and implementing TMDL requirements. As such, the table should be clear and accurate in conveying the TMDL requirements. The following revisions are proposed to ensure clarity regarding the TMDL requirements:

-
- The percent reduction for "non-permitted urban stormwater" is specified as both 88% reduction and 75% reduction. This should be revised to reflect the 75% reduction being sought from this sector. Similarly, atmospheric deposition is specified as both an 88% reduction and an 11% reduction. Atmospheric deposition should be revised to reflect the 11% reduction being sought from this sector.
 - With respect to incorporating Reserve Capacity, the write up and methods are confusing and subjective. With respect to footnote #3 in Table 10-1, it is not clear how an additional 1% reduction from atmospheric deposition would be available for reserve capacity. DEQ should provide a discussion as to how the 1% number was derived? In addition, there is an error in the math of the fourth equation on page 63. $42.17 \text{ g/day} - 0.42 \text{ g/day} = 41.75 \text{ g/day}$ not 41.58 g/day .
 - Table 10-1 notes that "NPDES wastewater point source discharges" are subject to a 10% reduction. In later sections, the TMDL document notes that the 10% reduction applies to major municipal NPDES wastewater discharges only and that minor municipal facilities are considered de minimis and not subject to the 10% reduction. A note should be included in Table 10-1 that states that minor municipal facilities are not subject to the percent reduction.

Section 13.3.1.11.1: In this section regarding nonpoint source stormwater management requirements for MS4 permit holders, the document states that "MS4 permit holders must also implement the six stormwater control measures as described in Table 13-10 in their jurisdictional areas outside of the urbanized area covered by the permit." We reiterate our comment about the inapplicability of the six minimum stormwater control measures to rural areas and the lack of technical support for applying urban standards in a different context. In addition, to avoid confusion, please add a statement to clarify that this does not apply to stormwater management areas covered by water pollution control facility (WPCF) permits such as those for underground injection controls (UICs). This clarification would be helpful in other sections of the document as well including Section 13.3.1.11.2 (Stormwater management requirements for non-permitted urban DMAs), and Section 9.4.2 regarding stormwater permits.

Section 12. Reserve capacity: Section 12 of the TMDL notes that the reserve capacity is an allocation for increases in pollutant loads from future growth and new or expanded sources. This section states that the reserve capacity may be granted to NPDES permitted point sources and/or nonpoint source DMAs and responsible parties. It is not clear how the reserve capacity would be made available for new or expanded sources in a TMDL that includes sector-specific percent reduction allocations. Please describe how the reserve capacity would be available for this purpose.

Section 10. Allocations: On page 61 of the TMDL document in the first paragraph of Section 10, the last sentence states that "the wasteload allocations are used to establish effluent limits in discharge permits." This sentence should be changed to say, "the implementation strategy associated with the wasteload allocations are incorporated into discharge permits," as the draft Willamette Basin Mercury TMDL does not propose effluent limits but rather strategies to implement wasteload allocations.

Section 13.1.1. Implementation Plans: This section states that wasteload allocations and/or other management strategies identified in the TMDL and WQMP will be incorporated into renewed NPDES permits as enforceable provisions. Since the draft Willamette Basin Mercury TMDL includes specific permit conditions that will be included in NPDES permits to implement the sector-specific wasteload allocations, this section should clearly state that the wasteload allocations will be implemented by incorporating the management strategies identified in Section 13.3.2.

Section 13.3.2.1.3. (Additional NPDES Wastewater Permit Implementation Tools): This section should be removed from the TMDL document. Given that the TMDL does not recommend inclusion of effluent limits in point source permits, this section regarding variances and intake credits is irrelevant and could lead to confusion.

Section 13.3.2.2.1 MS4 Phase II Permittees: There is a requirement in this section to "develop a control measure effectiveness monitoring strategy to inform implementation of future control measures." We are interpreting this requirement to apply to only those entities that choose to implement a mercury minimization plan to meet TMDL requirements and not to Phase II jurisdictions covered under an individual permit that include the conditions in the MS4 Phase II general permit effective at the time regarding construction and post-construction requirements. If that is the correct interpretation, this requirement for a monitoring strategy should be expressed as a bulleted item along with the other required plan elements. If this is not the correct interpretation, it does not make sense to require individual Phase II MS4 NPDES Permittees to conduct monitoring as there is not a rationale that would make these jurisdictions in greater need of monitoring than a general MS4 Phase II permittee. And, this requirement could end up applying to very small communities with limited resources. Monitoring requires significant staffing, resources and sophistication even for the larger jurisdictions and reduces resources available for actions to improve water quality.

Timelines: As stated on page 73, Implementation Plans would be required for submittal 18 months after issuance of the TMDL. In addition, on page 121, the document states that as part of the five-year review, DEQ will evaluate the adequacy of the strategies contained in implementation plans to reduce pollutant inputs and restore water quality. As part of the Willamette River Basin TMDL five-year review, implementation plans were recently updated and submitted to DEQ in late 2018 and early 2019. It is simpler, more efficient and more effective to align TMDL reports such that data collection, evaluation and reporting on all programs can be done at the same time. The permittees are more likely to gain information about their programs and systems from this alignment. Please align the timeframes for the next five-year reviews for both the recently submitted plans, and the plan that will be required 18 months following TMDL issuance.

The timelines listed in Table 13-11 are population based, and do not take into account the expansive geographic areas and jurisdictional overlaps that Counties will be required to navigate in implementing the six minimum measures. For

these reasons, we suggest that additional time be considered for County implementation.

Section 13.6 Monitoring and Evaluation:

In this section it states that "DEQ and EPA are currently developing an Assessment and Monitoring Strategy to Support Implementation of Mercury Total Maximum Daily Loads for the Willamette Basin. This monitoring strategy will be used to evaluate effectiveness of DMA and responsible person implementation strategies at meeting allocations and may require certain DMAs to collect data. " Given our previous and significant experience with monitoring, and the potential for significant resource implications, we request an opportunity to be involved in, and provide input on the development of this strategy.

Section 9.4.1.1. Municipal Sewage Treatment Plant Permits: Table 9-3 specifies that the City of McMinnville's treatment facility discharges to the Willamette River. The City of McMinnville's treatment facility discharges to the South Yamhill River; this table should be corrected accordingly.

Section 13.3.3.1 Other DEQ Mercury Reduction Programs: The section in the draft WQMP titled "Air Emissions Mercury Reductions" is surprisingly short; only one sentence. Since "...atmospheric deposition is the major source of mercury" to the river (see Section 13.3.2.2, page 116), much more information should be provided here about the work DEQ is and will be doing to reduce the amount of mercury which is discharged into the air :from sources within Oregon.

Public Review Draft Technical Support Document:

Target Fish Species: ACWA continues to have concerns with use of the Northern Pikeminnow as the target fish species given our understanding that this fish is not widely consumed. The water quality standard for mercury is based on protection of human health and assumes a 175 g/day consumption rate, which equates to 30 6-oz servings per month. Northern pikeminnow are certainly not being consumed at this rate, and we have seen no published support justifying this underlying assumption. This paints an inaccurate picture of fish consumption in the Willamette River basin. Given this target species selection, we also have concerns about communications to the public at large. The first question people ask with regards to mercury is whether it is safe to consume fish. With the use of the Northern Pikeminnow as the target fish, the primary message is that fish in the Willamette River are highly contaminated and should not be consumed. We do not feel that this is an accurate or appropriate message. We propose that DEQ convey a more accurate picture of fish consumption considerations in the Willamette River basin and reflect this consumption in the TMDL approach. Additionally, the use of the Northern Pikeminnow as the target fish species establishes an unrealistic goal for the TMDL. A more widely consumed fish or an analogue fish should have been used to provide more meaningful and realistic goal in terms of in-stream mercury concentrations goals for the TMDL. Short of that, DEQ needs to equate the use of the Northern Pikeminnow in terms of the margin of safety factors that would otherwise be applied to the use of a salmonid or other widely consumed fish.

Biomagnification Factors: The values used in Table 3-5 for WRB Cumulative BMF are incorrectly listed as medians but are actually 95th percentile values as pulled from Table 3-3. This impacts Figure 3- 7 as well. This relates to Table 6.2 and Figure 6.2 in the TMDL document as well. Were the median values or the 95th percentile values used in moving forward with the translator model? This has important implications in understanding the margin of safety.

WWTP Flows: Table 5-9 (page 89) presents the average annual flows and average mercury concentrations for large Publicly Owned Treatment Works (POTWs), which are used to estimate total mercury loads in the Willamette River Basin. The average annual flows in the table appear to be a mix of actual flows and design flows. There can be a considerable difference between actual flows and design flows. For example, a design flow, which equates to 57.4 MGD, was used to estimate mercury loads for Clean Water Services' Rock Creek treatment facility whereas actual flows are 32.4 MGD (for 2018). It appears that actual flows were used for most other POTWs. Since the purpose of this evaluation is to estimate current loads, it would be more appropriate to use actual annual average flows rather than design flows. The table should be revised to ensure that actual annual average flows are being used.

Additionally, a cursory review of the flow data suggests that the annual average flow for at least one POTW is highly inaccurate. The flow for the Salem facility is specified as 690 MG per year in Table 5- 9, which equates to daily average flow of 1.9 MGD. The City of Salem operates a treatment facility with an annual average flow of 15,085 MG per year. Flows from this facility are considerably higher than presented in Table 5-9. DEQ should revise the flow for the Salem facility and verify the accuracy of the annual average POTW flows presented in Table 5-9.

Mercury Concentrations Reflective of POTW Discharges: In table 5-9 (page 89), we have concerns related to the high mercury concentrations used in the model for some of the POTWs. For several facilities, where concentrations were not available, the Technical Support Document notes that data from similar facilities was used and concluded that 11.7 ng/L was the appropriate mercury concentration. This concentration is much higher than the median mercury concentration from POTWs which is 2.6 ng/L. This median mercury concentration of 2.6 ng/L was used by DEQ to characterize mercury levels for minor municipal facilities when data were not available. This concentration should be used for all facilities where data were not available.

Additionally, Table 5-9 specifies very high mercury concentrations for the Wilsonville, Portland (Tryon Creek), and Salem facilities. There is nothing unique about these facilities that would justify the substantially higher concentrations noted in the report. This is likely due to the use of higher quantitation levels resulting in a mix of censored and uncensored data. Again, we note that the median concentration is a better estimate of POTW effluent quality for use in modeling.

Combined Sewer Areas: It is not clear how the Technical Support document addresses the combined sewer service area in Portland. On page 106, the report states that "THg loads associated with CSOs are considered to be already represented by estimates of THg load associated with urban stormwater." What urban stormwater load is being referenced here? Urban stormwater from outside of the CSO area or urban stormwater from the CSO area? This is not clear. ACWA has asked previously for clarification regarding the modeling inputs being used to calculate stormwater loads from the MS4 areas. Providing this information would result in transparency regarding stormwater loads calculations. We continue to request that this input data be provided.

Stormwater Modeling: We are requesting that additional information be included in the Technical Support Document to better explain the approaches and data that were used for stormwater loads modeling. We need to understand the MS4 areas that were used in the model, and that information is not ascertainable in the draft document. A table should be added to show the MS4 jurisdictions included in the model and the impervious area and effective impervious area estimations used for each jurisdiction. This information would be helpful in ensuring that areas such as those draining to UICs are not included.

Additionally, understanding the model inputs is necessary for conducting the wasteload allocation attainment analyses, which are precursors to developing benchmarks as specified in Phase IMS4 NPDES permits. Knowing the model inputs will allow for an "apples to apples" comparison in future wasteload allocation assessments.

Thank you for your consideration of these comments. Addressing the comments and questions provided above will go a long way towards producing a clear, transparent and implementable Willamette River mercury TMDL. Please do not hesitate to contact me with any questions you may have.

Sincerely,

Susan L. Smitt5 Executive Director

Cc:

Justin Green, DEQ Water Quality Administrator

Jennifer Wigal, DEQ Deputy Water Quality Administrator

5 September 2019

**60. Dave Dillon,
Oregon
Farm
Bureau,
Oregon
Forest &
Industries,
Oregon
Asso. of
Nurseries**

Oregon Department of Environmental Quality 700 NE Multnomah Street, Suite 600
Portland, Oregon 97232

Sent via e-mail to WillametteMercuryTMDL@deq.state.or.us
Re: Comments regarding the Revised Willamette Basin Mercury TMDL, Draft for Public Comment

Dear Ms. Matzke:

The Oregon Farm Bureau (OFB), Oregon Forest and Industries Council (OFIC), and Oregon Association of Nurseries (OAN) submit this letter jointly to convey our comments pertaining to the draft Willamette Basin Mercury TMDL prepared by the Oregon Department of Environmental Quality (ODEQ). Our comments are based on our review of this document, our participation as members of the Advisory Committee for this TMDL, and the very real impact this TMDL could have on our memberships.

By way of background, OFB is a nonprofit organization that has been a voice for Oregon's family farmers and ranchers for 100 years. The OFB has nearly 7,000 members statewide. Over 3,000 of those members are located within the Willamette Valley. In the Willamette Valley, OFB members raise nearly 225 types of crops and livestock. OFIC is a nonprofit organization that represents over 50 Oregon forestland owners and forest products manufacturers who manage over 5 million acres of Oregon forestlands and employ nearly 60,000 Oregonians. The OAN is a nonprofit organization that provides a voice for over 700 nursery stock producers, retailers, landscapers, and other companies across the state. Since the inception of our nonpoint source water quality programs, and for years before, our members have worked to protect, maintain and enhance water quality throughout the Willamette Valley.

Agriculture and Forestry are not the Source of Mercury Exceedances

The agricultural and forestry sectors have always been proactive about protecting, maintaining and enhancing water quality on agricultural and forestry lands, which combined represent by far the largest land use in the Willamette Valley. Indeed, our industries were proactive in developing the Agricultural Water Quality Management Program and Forest Practices Act years before most states had thought of developing their nonpoint source programs. Since that time, we have invested millions in studies, on-the-ground work, and compliance with our respective programs. We will continue to be proactive into the future, as evidenced by the millions invested by each of our sectors each year in proactive water quality improvements.

Section 14.2 of the TMDL document states clearly that atmospheric deposition of mercury is the dominant source of mercury reaching Willamette Basin streams and that air emissions from Oregon are small relative to global sources. The fact that Oregonians are not the source of mercury exceedances has made writing this TMDL exceedingly challenging, and we do not envy ODEQ's work to address a source of pollutant outside its control. Although the mercury entering the Willamette River system from our land originated from the atmosphere, and not

from our activities, we will continue to invest in water quality on our lands and meet the rigorous requirements under our respective programs. However, without addressing the real cause of the mercury exceedances, this TMDL may request reductions that are larger than any basin stakeholder can manage.

Oregon's farmers and foresters are doing an exceptional job investing in water quality improvements, studying water quality on our lands, and meeting the requirements of our programs, and we will continue to do so after this TMDL is adopted. That said, we have concerns about the modeling that we set forth below, and which we would like to see you address prior to adopting the TMDL. The myriad of significant issues with the modeling underlying the TMDL, combined with the fact that our sectors are not responsible for the mercury emissions causing the mercury exceedances, has resulted in the agriculture and forestry sectors being unable to support the load allocations and reductions requested through the TMDL. As always, we will continue to work with our designated management agencies (DMAs) to continue to invest in and improve water quality across Oregon.

There are Significant Technical Issues with the TMDL

Our technical comments cover three main topics. First, we have many concerns about specific dimensions of the modeling that underlies the TMDL allocations. Second, we comment on the loading capacity and the ensuing load allocations. Third, we request several enhancements to the questionable and incomplete analysis offered by ODEQ in support of total suspended sediment (TSS) concentrations as a surrogate for the concentration of total mercury (THg) in the Willamette River and its tributaries, which is itself a surrogate for methylmercury in the water column, which is in turn used to derive mercury concentrations in fish tissue via a complex food web model.

Shortcomings and Uncertainties in the Modeling

Your team has created a TMDL that allocates daily loads and wasteloads of mercury from nonpoint source areas and point source dischargers to the Willamette River system. These will be based on the results of six separate computer models. Each of these models introduces uncertainty into the allocations, and some of these models have been developed with disputable modeling practices. We describe below the major uncertainties and shortcomings.

Modeling Practice

The consultants contracted by the EPA for this TMDL study have made multiple questionable modeling decisions that depart from best practices used in work of this nature. Notably:

- Appendix A of the TMDL document, the Technical Support Document, describes no sensitivity analyses of the model output to reasonable variations in model input data sets or parameters. For example, no sensitivity analyses have been performed to determine how the values of the biomagnification factor of the Food Web Model (FWM) might vary given other modeling decisions or how its variation might affect the calibration of the FWM. This implies that other reasonable values for this and other important modeling input parameters might also lead to satisfactory model calibrations. However, these different values would also lead to different outcomes for the target mercury concentration that drives the load and wasteload allocations.

-
- The Margin of Safety (MOS) provided by the modeling has not been quantified. Section 11 of the draft TMDL document describes an implicit MOS due to the use of the northern pikeminnow as the fish species whose bioaccumulation determines the target concentration of mercury in the river system, the use of the median concentration from the FWM as the TMDL target concentration, and the use of total mercury concentration in fish tissue. These are conservative assumptions that provide a MOS, but the degree of conservatism achieved by these assumptions has not been described quantitatively. It is therefore possible that the TMDL study may have produced an overly conservative target THg concentration for the Willamette River that has led to unnecessarily low load and wasteload allocations in the TMDL.

Food Web Model

The FWM links methylmercury exposure of fish to fish tissue concentrations based on an understanding of the Willamette River food web and the bioaccumulation and biomagnification within it. This model is calibrated so the concentrations of mercury in fish tissue match the concentrations measured in fish tissue samples collected from the Willamette River and its tributaries. However, once calibrated, its main utility is to provide one of its parameters, the biomagnification factor, to the mercury translator model (discussed below). This approach introduces significant and compounded uncertainty to the target THg concentration in the Willamette River. Additionally:

- The FWM calibration is marginal for the northern pikeminnow. This is the only fish whose parameterization is used in the determination of the target concentration of THg in the river system. Although no statistical evaluation of the quality of the calibration was provided in the contractor's modeling report, inspection of Figure 3-4 in the Technical Support Document (i.e., TMDL Appendix A) reveals that the cumulative distribution function of modeled fish tissue mercury concentrations in the northern pikeminnow agrees with the distribution of observed data only around the 60th percentile concentration. Most of the rest of the modeled distribution is outside the 95% confidence interval of the distribution based on observed data. With this marginal and unquantified model calibration (and the lack of sensitivity analyses described above), we cannot be confident in the target THg concentration.

- We understand that the model input parameters pertaining to three main processes were used to calibrate the FWM: the fish ingestion rate of mercury, the fish assimilation rate of mercury, and the fish elimination rate of mercury. From this approach, the necessary biomagnification factor is determined for the model to match observed fish tissue concentrations as closely as possible. We are concerned that there may be other reasonable values for these model input parameters that produce a decent match between the model output and observed fish tissue concentrations. If so, these would require different biomagnification factors for model output to match data. We acknowledge that this probabilistic model does not use single values for its model input parameters but instead expresses them as distributions. However, the median value of the distribution of biomagnification factor, not a range resulting from the distribution, is used in the calculation of the target THg concentration in the river. Therefore, there may be other reasonable distributions for the biomagnification factor (and, consequently, other median values) that can lead to an acceptable model calibration. This implies that the model could produce the "right" answer for the wrong reason.

Consequently, we lack confidence in the target THg concentration that is calculated, in part, from the median biomagnification factor determined by the EPA contractor.

Mercury Translator Model

The Mercury Translator Model uses the biomagnification factor from the FWM and a mercury translator value to calculate a target concentration of THg in the water column from the concentration of dissolved methylmercury used as an input variable to the FWM. In this model, the slope of the regression line calculated from the aggregation of individual pairs of measured THg and methylmercury concentrations in the water column is heavily influenced by three pairs of observations. The remaining pairs of observations in Figure 6-3 do not fall in a line. We question whether linear regression is an appropriate statistical method for calculating the translator value.

It may be more appropriate to present the translator value for each HUC8 basin and then average the 12 values while expressing the uncertainty of that mean. The use of linear regression on a data set that is neither linear nor normally distributed leads us to question the validity of the target THg concentration.

Mass Balance Model

The Mass Balance Model (MBM) exists separately from the FWM and the Translator Model. Whereas the FWM and Translator Model are used together to determine the target THg concentration in the water column, the MBM determines the present-day contributions of THg to the Willamette River system from a variety of sources. These values are compared to the THg loading capacity (discussed below) when developing the load allocations of the TMDL. The representation of nonpoint sources in the MBM raises the following concerns:

- Results of three other models serve as important inputs or points of comparison for the contributions of nonpoint sources to the Willamette River system. These models are:
 - o the hydrology model of the Willamette Basin created by the EPA contractor several years ago using the software package HSPF,
 - o the model of dry atmospheric deposition of mercury used by Domagalski et al. (2016), and
 - o the USGS LOADEST model from which the EPA contractor calculated THg concentrations in the Willamette River that were then used as a calibration target for the MBM.

For this reason, the TMDL will be based on six models, not the three commonly described by your team, the EPA, and its contractor. Using the output of two models as inputs of the MBM compounds uncertainty. Calibrating to the results of a separate model implies that the MBM is calibrated to match a number with its own, presently unquantified, uncertainty. While this may be unavoidable, we do not find an acknowledgement of these uncertainties in the calculation of existing loads in the TMDL. It would be appropriate to perform additional model simulations with reasonable upper and lower bounds of, for example, atmospheric deposition or soil mercury concentrations. No such calculations are described in the TMDL document (or the Technical Support Document), which reports single numbers (i.e., values with no associated uncertainties) in Table 6-7. The lack of

an acknowledgement of the uncertainty in the MBM decreases our confidence in the existing loads and the subsequent calculations that use them.

- The HSPF model raises some additional concerns:
 - Our experience suggests the model’s representation of agricultural land may be poor. We are unsure of the impact of any inaccuracies on the final modeling results.
 - We have not seen an explanation of the justification of infiltration rates in this model. This is critical for the distinction used by your team between mercury attributable to atmospheric sources and to groundwater.
- The soil mercury concentrations interpolated from a 2013 USGS study appear to be highly uncertain due to a low spatial resolution of the observed data and a lack of detail in the interpolation (Tetra Tech, 2018a).

Loading Capacity and Load Allocations

The calculation of the daily loading capacity of THg in the Willamette River system is presented in Section 7.2. The load determined is 42.17 g/day. This value is critical for developing the load and wasteload allocations in Section 10. However, this calculation is unclear. Below Table 7-1, the text states that the quantity L_{Current} is “estimated to be 361 g/day”, a value consistent with Table 6-7. However, in the ensuing equations that calculate the quantities L_{Excess} and Load Capacity, the value 351.42 g/day is used for L_{Current}. Using the value of 361 g/day leads to a slightly higher load capacity. If this is an error, please correct it. If 351.42 g/day is the correct value for L_{Current}, please alter this passage to resolve the confusion we express here.

The TMDL allocations depend on the categorization of source sectors in Table 10-1. In this categorization, atmospheric deposition appears both as part of the “General Nonpoint Source and Background” that is to be reduced by 88% and as its own category that will be reduced by 11%. The former is an aggregation of categories used in the Technical Support Document: sediment erosion, surface runoff, groundwater, and atmospheric deposition directly to water. We do not understand what the second atmospheric deposition category can be if it is not delivering mercury that reaches the river system via sediment erosion, surface runoff, groundwater, or direct deposition. Why does the assumed 11% decrease in future atmospheric deposition not contribute to the required reduction to the General Nonpoint Source and Background category?

Total Suspended Solids as a Surrogate for Total Mercury

ODEQ evaluated the use of the concentration of TSS as a surrogate for the concentration of THg in water. If the relationship between the concentrations of TSS and THg is statistically robust, then TSS could be measured in place of THg, thus reducing the costs of assessment and monitoring related to this TMDL. As presently drafted, the analysis presented in Section 10.3 and Appendix H raises several concerns about whether the concentration of TSS can defensibly be adopted as a surrogate for the concentration THg in this system.

In a memo from the EPA contractor that was provided to the Willamette Basin TMDL Advisory Committee in an e-mail from Priscilla Woolverton on 14 June 2019, TSS is ranked as the least preferable of four surrogates analyzed, behind suspended sediment concentration and two separate

turbidity measurements (Tetra Tech 2018b). This analysis was not mentioned in the TMDL document or Appendix H. Please explain why TSS has been chosen by ODEQ as a surrogate rather than other options that have been judged as preferable.

The use of TSS as a surrogate is justified with a citation in Section 1.1 of Appendix H to a paper about urban stormwater runoff. Please justify this use of TSS as a surrogate by providing and explaining in detail the findings of any papers that show a relationship between TSS and THg in a river system that resembles to the Willamette River and its tributaries.

The statistical relationship described in Appendix H (known as a Linear Mixed Effects, or “LME” statistical model), shows that measurements of TSS and the specification of the location of that measurement can explain 81% of the variation in the THg data set. Thus, estimating THg concentrations with a surrogate introduces uncertainty into measurements of THg. This is especially true because of the low concentrations of THg, which imply that even small absolute uncertainty can have a large relative importance. Please describe how this uncertainty will be addressed if TSS is to be used as a surrogate during allocation, compliance, or field monitoring.

Please demonstrate that the data used for the LME model are:

- Sufficient: Why does ODEQ believe that 63 paired observations are enough for this analysis? How many samples are generally used to develop strong LME models?

- Adequate: Please show the results of statistical tests that evaluate the normality of the TSS and THg data sets following the logarithmic transformation that was performed.

The LME model is complicated. Please justify the use of the LME model by explaining:

- why a simpler model (such as a multivariate model using TSS and sampling location) cannot be used here,
- why it is valid to assume that observations from the same sampling site are not independent (this is implied by the choice of “sites” as a random effect in the LME model), and

- how the “sites” variable was represented in the LME model. Is it categorical or continuous? The results of this analysis are unclear. Please clarify by:

- Stating the intercepts for the fixed and random effects separately in Equation 3 of Appendix

H. This will make the random effects due to the variable “sites” clearer.

- Showing both the adjusted R² and conditional R² in Table 9 and discussing each separately.

- Providing examples in which “sites”, which you have identified as a random predictor variable, are used along with TSS to predict concentrations of THg.

Please resolve concerns about the quality of this analysis, specifically those related to:

- Example 1 in Section 1.5 uses the LME model to indicate that a THg concentration of 0.14 ng/L is predicted by a TSS concentration of 4.272×10^{-14} mg/L. The former is a low but plausible concentration for THg in a river, but the latter is many orders of magnitude lower than the lowest TSS concentration one could ever hope to measure in a large river like the Willamette River.

- Example 2 in Section 1.5 uses the LME model to relate a TSS concentration of 100 mg/L, which is high yet reasonable for a large river, to a concentration of THg of 8.38 mg/L, which is implausibly high relative to all observations presented in Table 1 of Appendix H.

Finally, if the above concerns can be resolved, we request that ODEQ clarify how a complicated LME model can guide mercury management by ODEQ or Designated Management Agencies. Does including “sites” as a random effect imply that each surrogate relationship will need to be site-specific? How can a surrogate relationship be used in practice to monitor THg concentrations (via measuring TSS concentration) when the relationship includes random effects? The present surrogate analysis leads us to three main concerns:

1. This surrogate analysis creates opacity for our members because the it does not incorporate available background information, adds uncertainty, and adds complexity without justification. It could easily lead to in-stream TSS requirements that seem arbitrary to our members.

2. The apparent flaws in the statistical model cause concern that its use by ODEQ or our Designated Management Agencies will require our members to do much more than necessary to control erosion and sediment runoff. One of the examples in Appendix H implies that the water must have unmeasurably low concentrations of suspended sediment to meet the target concentration of THg.

3. This surrogate analysis will be confusing to our members because we do not understand how a statistical model with random effects will be used in practice.

Further, Section 10.3 of the TMDL document justifies the use of a surrogate by citing Oregon Administrative Rule (OAR) 340-042-0040(5)(b), which permits the use of a surrogate “to estimate allocations for pollutants addressed in the TMDL”. However, Section 10.3 of the TMDL document presents a statistical relationship between TSS and THg and uses it to determine allocations of TSS that would correspond to the allocations of THg already developed. The TMDL document then states that these TSS allocations will be “used for evaluating effectiveness of the TMDL” because monitoring of “total mercury can be difficult and cost-prohibitive”. This indicates that ODEQ seeks to use TSS as a surrogate to facilitate monitoring following the allocations of mercury in Section 10.1, not to create the allocations themselves. This contradicts the allowed use of a surrogate in OAR 340-042-0040(5)(b).

Section 10.3 of the TMDL document and Section 1.1 of Appendix H state in general terms that monitoring for THg can be difficult and cost-prohibitive. However, monitoring of THg must have occurred to include Willamette River reaches and tributary reaches on the 303(d) list in the first place. If a surrogate will be used, what will be the appropriate mix of surrogate measurements and THg measurements? Will any THg measurements be made if a surrogate is used? What would be the cost savings gained from using TSS as a surrogate for THg,

and why is this enough to justify the development of this statistical relationship and the uncertainties that will come with the use of a surrogate? Finally, the structure of Appendix H, Table 12 makes this surrogate analysis start to look like a TSS reduction program rather than a THg reduction program. It would be more appropriate to write about the THg reductions ODEQ seeks and correlate that to TSS rather than discuss the TSS reductions ODEQ needs to see.

Conclusion

Our organizations and the foresters, farmers, and growers of Oregon have done much in recent decades to protect surface water quality. From new stream buffers to wet weather haul rules to strategic implementation areas, we have worked with DEQ and our DMAs to protect the waters of our state. We commit to continuing this close engagement on water quality issues into the future. However, we have significant concerns about ODEQ's development of this TMDL and the compounded uncertainties discussed above. Given that this pollution is largely outside of Oregon's control, the concern with the TMDL outlined above will make it hard to create buy in on this TMDL from our members. Why should Oregon's farmers and foresters be required to mitigate pollution they did not introduce? Likewise, the TMDL proposes to regulate Total Suspended Solids as a means of driving reductions in fish tissue methylmercury concentrations. The relationship between these two parameters is extremely remote, and requires the agency model several water quality parameter relationships with compounding uncertainty. This creates the very real risk that Oregon will require very expensive measures with no change relative to the actual water quality standard. This problem is due in part to the highly conservative water quality standard upon which this TMDL is based. When compounded by additional, unquantified, and conservative assumptions in the TMDL modeling, the margin of safety implicit in the load reductions specified by this TMDL are exceedingly cautious and divorced from reality.

Oregon farmers and foresters should not be asked to bear the risk of this uncertainty. We encourage ODEQ to address our concerns, and to work closely with the Designated Management Agencies (DMAs) on implementation to assess what is truly possible and necessary within localized areas.

We look forward to continuing to work together as the Willamette Basin Mercury TMDL and WQMP are finalized in the coming months.

Sincerely,

Dave Dillon Executive Director Oregon Farm Bureau
Kristina McNitt Executive Director
Oregon Forest & Industries Council
Jeff Stone Executive Director
Oregon Association of Nurseries

References

Domagalski, J., M.S. Majewski, C.N. Alpers, C.S. Eckley, C.A. Eagles-Smith, L. Schenk, and S. Wherry. 2016. Comparison of mercury mass loading in streams to atmospheric deposition in watersheds of Western North America: Evidence for

non-atmospheric mercury sources. *Science of the Total Environment*: 568: 638-650.

Tetra Tech. 2018a. Willamette Mercury TMDL Technical Approach. Presentation to the Willamette Mercury TMDL Advisory Committee Meeting, August 22, 2018. Accessed online at <https://www.oregon.gov/deq/FilterDocs/willtmdlm6agenda.pdf>.

Tetra Tech. 2018b. Draft Memorandum: Potential THg Surrogate Measures. Memorandum from J. Butcher and M. Fernandez to A. Henning, J. Ramrakha, P. Calvert, and K. Brannan dated 27 July 2018.

September 3, 2019

**61. Mike
Russell,
Columbia
County,
Oregon**

Andrea Matzke, Basin Coordinator 700 NE Multnomah Street, Suite 600
Portland, OR 97232

RE: Revised Willamette Basin Mercury TMDL

Dear Ms. Matzke,

Columbia County received your request for public comments on the Revised Willamette Basin Mercury TMDL. The Departments of Public Works and Land Development Services submit the following in response.

Columbia County, as with other Oregon agencies, have worked hard to be good stewards of the environment and comply with all applicable environmental regulations, and apply regulations we have authority over, to the benefit of everyone. This will be no different as we continue our efforts to protect clean water resources and administer our various responsibilities with this in mind.

However, Columbia County has some concerns regarding the proposed revisions to the Willamette Basin TMDL and request clarification on the following items.

Changes to the Impacted Area

Initially, Columbia County was aware of DEQ's desire to expand TMDL requirements to the lower Willamette, but understood that only a very small portion of Columbia County would be included. With this information, we were not very active in monitoring the process until the draft was released and we saw that the Multnomah Channel was included and took in a larger area of the County including our two largest cities: St. Helens (pop. 13,240) and Scappoose (pop. 7,200). We believe not having County's represented in the creation of the Draft document has caused this confusion.

Unfunded Requirements

We realize some have already established a good framework for responding to this through their respective efforts under existing NPDES permits, but, for a small rural County such as Columbia County, this will create the need for regulatory effort exercised by Columbia County which currently does not exist. This means unfunded increases in staff responsibilities, most likely requiring additional FTE either shared by existing positions (which are already over-allocated as Oregon Counties continue to do more with less) or creating new staff positions to create and administer these new responsibilities.

Ambiguity in Area of Concern

For Columbia County, we need more definition on the area of concern/permit boundary within the County. For NPDES MS4's, it has been limited to "urbanizable areas" mostly and did not extend into less populated rural areas. We feel this extension of urban requirements to the mostly rural areas of our county are too burdensome and we are unsure of the benefit gained for the amount of effort required to stand up a mercury reduction program in these areas.

NPDES permitting authority is designed to develop a set of designation criteria to all small MS4s located outside of a UA serving a jurisdiction with a population of at least 10,000 and a population density of at least 1,000 people/square mile. Columbia County's rural population density is approximately 34 people/square mile, or 0.34% of a UA. This demonstrates the County is not a UA, nor a small MS4, as defined by current NPDES requirements.

Ability to "Rely on Others"

NPDES Phase II allowed for Designated Management Agencies (DMA's) to partner with other DMA's to provide the six minimum measures. As an example, many Oregon counties let cities manage new development within the urban fringe areas which lends itself to letting them manage TMDL requirements for new developments as well. Are Counties going to be able to do this under the proposed TMDL or will we have to provide for all six measures independently and possibly overlap management responsibilities with our cities? The WQMP does not address this at all.

Ability to Demonstrate Compliance

It is not clear to us how we will be able to demonstrate or measure our compliance with the TMDL. It appears that the majority of mercury deposition is non-point sourced and beyond any direct control other than regulating soil disturbance for construction or otherwise.

Columbia County experiences typical Oregon weather and has documented widespread slope stability issues throughout the County. It is not unreasonable to expect that storms could displace enough soil in slides and erosion into our streams that we would see increases in Mercury over the permit period. These are Acts of God that are completely out of our control or ability to mitigate. How will this be accounted for in determining Columbia County's compliance?

Current Ordinances, Policies, and Procedures may be sufficient without having the administrative burden of a TMDL permit, especially for smaller agencies. To what extent do existing activities by agencies already meet the intent of the TMDL and can be considered compliant without having to burden small jurisdictions further? We encourage DEQ to pause and perform a gap analysis to determine if actions already being undertaken by small agencies as a matter of course in meeting other regulatory requirements substantially meet the intent of the TMDL.

Thank you for the opportunity to comment. We recognize the need to protect the water quality of Oregon's rivers, however, we request that DEQ pause and reevaluate the impacts of imposing urban stormwater standards in the rural context.

Sincerely,

Mike Russell
Public Works Director (503) 387-5090

Karen Schminke
Land Development Services Director (503) 397-1501

September 6, 2019

**62. Jared
Rubin,
Eugene
Water &
Electric
Board,
Oregon**

Eugene Water & Electric Board
PO Box 10148
Eugene, OR 97440-2148
541-685-7000
www.eweb.org

Ms. Andrea Matzke, Basin Coordinator Oregon Department of Environmental
Quality 700 NE Multnomah Street, Suite 600
Portland, OR 97232

Dear Ms. Matzke:

The Eugene Water & Electric Board (EWEB) would like to submit the following
comments on the Revised Willamette Basin Mercury TMDL, released for public
review and comment on July 3, 2019.

EWEB is Oregon's largest customer-owned public utility providing electricity and
water to Eugene and portions of the McKenzie River Valley. EWEB operates a
number of reservoirs in the McKenzie Basin for the purposes of generating
hydroelectricity. The largest of these reservoirs are located in the Upper
McKenzie Sub-basin on land managed by the US Forest
Service (USFS). EWEB's reservoir operations are governed by our long-term
operating licenses, issued by the Federal Energy Regulatory Commission (FERC).

The Revised Willamette Basin Mercury TMDL lists EWEB as a Designated
Management Agency due to our reservoir operations. Figure 13-2 of the draft
TMDL lists the Carmen Diversion, Smith and Trail Bridge reservoirs in the Upper
McKenzie, along with the Walterville Power Intake and the Walterville Pumped
Storage Pond. Leaburg Lake is not listed in Figure 13-2. It is important to note
that EWEB has not utilized the Walterville Pumped Storage Pond for decades and
the pond was completely drained in 2016 and no longer exists. Therefore, both the
Walterville Pumped Storage Pond and the associated Walterville Power Intake
should be omitted from both Figure 13-2 and the corresponding text in Section
13.3.1.22.3.

There are additional inaccuracies in the text in Section 13.3.1.22.3. The first
paragraph mentions the Leaburg and Walterville dams in the Upper McKenzie
Sub-basin. Whereas Leaburg Lake may qualify as an impoundment, there is no
Walterville Dam. Water for the Walterville canal is diverted from the mainstem
McKenzie River for the purposes of hydroelectric generation -there is no reservoir
storage. In addition, both Leaburg Lake and the Walterville Canal are located in
the Lower McKenzie Sub-basin.

EWEB looks forward to working with the Oregon Department of Environmental
Quality (DEQ) to determine what steps we can take, if any, to address
methylmercury production in the reservoirs we operate. As indicated previously,
EWEB's reservoirs are located primarily on USFS land and our operations are
strictly governed by EWEB's operating licenses from FERC.

EWEB appreciates the opportunity to provide you with these comments on the draft Mercury TMDL. In the event that you have any questions related to any of these comments, please do not hesitate to contact me at 541-685-7609.

Thank you very much for your time and consideration.

Jared G. Rubin, Ph.D.

Interim Environmental and Property Supervisor Eugene Water & Electric Board

September 6, 2019

**63. Katie Fast,
Oregonians
for Food &
Shelter
(OFS),
Oregon
Cattlemen's
Association,
Oregon**

Andrea Matzke, Basin Coordinator
Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, Oregon 97232
WillametteMercuryTMDL@deq.state.or.us

Re: Comments regarding the Revised Willamette Basin Mercury TMDL

Dear Ms. Matzke:

On behalf of Oregonians for Food & Shelter and Oregon Cattlemen's Association thank you for the opportunity to provide comments on the Willamette Mercury TMDL. Our organizations represent a coalition of farmers, ranchers and forestland owners throughout Oregon.

As in initial matter, agriculture and forestry have always been proactive about protecting water quality on our lands, which are part of the largest land use in the Willamette Valley. Our state was one of the first to have a robust nonpoint source pollution program, and our members were proactive in helping to develop and implement the Agricultural Water Quality Management Program and Forest Practices Act. Since development of these programs, our sector has invested millions in studies, on-the-ground work, and compliance with our respective programs. We will continue to engage proactively with our programs and to support public and private investment in water quality improvements on agricultural and forestry land.

The Willamette Mercury TMDL is clear that our sectors are not the cause of mercury in the Willamette Basin. Rather, atmospheric deposition of mercury is the dominant source of mercury from foreign sources and is responsible for the mercury loading in the Willamette Basin. Any air emissions from within Oregon pale in comparison to the large amount of mercury Oregon receives from foreign sources. This fact has made writing a TMDL to reduce mercury loading in the Willamette Basin a nearly impossible task. Although our activities are not the source of mercury in the Willamette Basin, we will continue to be proactive about engaging to improve water quality in the Willamette Basin. That said, without addressing the real cause of mercury exceedances in the Willamette Basin, we are concerned that this TMDL requests load reductions that are larger than any sector can manage.

With that in mind, we raise the following concerns with the modeling and load reductions presented in the Willamette Mercury TMDL.

- Load Allocations are Uncertain because of Modeling - TMDL allocates daily loads and wasteloads of mercury from nonpoint source areas and point source dischargers to the Willamette River system. These loads are based on the results of six separate computer models that were developed with hotly contested modeling practices. For example, the use of the Northern Pike Minnow and the chosen biomagnification factors for input parameters are not scientifically valid.

This layering of uncertain modeling injects significant uncertainty into the load allocations.

- Role of Atmospheric Deposition is Unclear - The TMDL allocations depend on the categorization of different sources (Table 10-1). In this categorization, atmospheric deposition is “double counted” as part of both the “General Nonpoint Source and Background” and as its own separate category. The former appears to be an aggregation of sediment erosion, surface runoff, groundwater, and atmospheric deposition directly to water. However, it is unclear what the second atmospheric deposition category represents, if it is not aerial deposition delivering mercury into the river system from sediment erosion, surface runoff, groundwater, or direct deposition. Moreover, the TMDL generally lacks clarity on atmospheric deposition of mercury and the impact foreign sources of Mercury is having on our waterways. Section 14.2 of the TMDL document states clearly that atmospheric deposition of mercury is the dominant source of mercury reaching Willamette Basin streams and that air emissions from Oregon are small relative to global sources.

- TSS Surrogacy is Questionable – It is unclear from the TMDL if the relationship between the concentrations of TSS and THg is statistically relevant. It remains uncertain whether TSS can truly be measured in place of THg. Moreover, TSS has been ranked as the least preferable of four surrogates analyzed by Tetra Tech. ODEQ must explain why TSS has been chosen as a surrogate rather than other options that have been judged as preferable.

We also incorporate in full the technical comments from the comment letter submitted by the Oregon Farm Bureau, Oregon Forest & Industries Council, and Oregon Association of Nurseries.

Oregon’s farmers and foresters are doing an exceptional job investing in water quality improvements, studying water quality on our lands, and meeting the requirements of our programs, and we will continue to do so after this TMDL is adopted. That said, our technical concerns should be addressed prior to adopting the TMDL. Due to the significant uncertainties in the model, we also hope additional work will be done through the Designated Management Agencies (DMAs) on implementation to assess what is truly possible and necessary within localized areas.

Please keep us updated as implementation moves forward and thank you for the opportunity to comment.

Katie Fast
Oregonians for Food & Shelter

Jerome Rosa
Oregon Cattlemen’s Association

Memorandum

64. Mike Powers, Oregon Department of Agriculture, Oregon

To: Andrea Matzke, Oregon Department of Environmental Quality From: Mike Powers, Oregon Department of Agriculture
Date: September 6, 2019,
Re: Public Comments for the Revised Willamette Basin Mercury TMDL: Draft for Public Comment, dated July 3, 2019

Thank you for the opportunity to review the Revised Willamette Basin Mercury TMDL: Draft for Public Comment, dated July 3, 2019. Following are the comments offered by the Oregon Department of Agriculture.

Chapter 1

Section 1.2.2, Table 1-3, p. 20

Table 1-3 reports the following information for Agriculture Total Area and Percent of Total Area (of the Willamette Basin): 912 sq. miles and 8.0% of Total Area.

This contrasts with information provided by the Oregon Department of Agriculture (ODA) in the publication State of Oregon Agriculture: Report from the State Board of Agriculture (January, 2019). This reports the following:

- Willamette Valley total land area □□9.0 million acres (Oregon Secretary of State, 2014)
- Land in farms □□1.7 million acres (USDA National Agricultural Statistics Service (NASS), 2014)

Using the estimates in the ODA publication, 1.7 million acres is approximately 2,656 square miles and 18.9% of the Willamette Valley.

ODA Comment: ODA wishes to note the discrepancy between the two estimates of the agricultural lands in the Willamette Basin.

Chapter 6

Section 6.1.4.3, p. 41

The document says that available groundwater samples show a low level of mercury, around 1 ng/L. Because groundwater makes up a significant portion of total flow of water in the basin, it accounts for about 17% of the total mercury source load.

ODA Comment: The statement that 17% of the mercury load comes from groundwater may not be fully supported by a sufficient amount of data. DEQ appears to have little data on mercury concentrations in groundwater, and much of the data it does have shows it is either non-detect or below 1 ng/l. However, DEQ used a blanket concentration of 1 ng/l for calculating the load. This number may be high, or may have significant uncertainty, considering the available data.

Section 6.2, Table 6-7, p. 42

In summary, the table provides the following information that may impact agricultural activities:

Source Category

Nonpoint Sources	Estimated Load of Total Mercury (g/day)	Relative Contribution to Total Load
Surface Runoff of atmospherically deposited mercury	118.0	32.7%
Groundwater	60.6	16.8%
Erosion of mercury containing soils	154.6	42.8%

ODA Comment: Both the Nonpoint Sources (NPS) of surface runoff of atmospheric mercury and erosion of soil mercury estimates are substantial. Both of these sources of mercury result from natural and human-caused erosion. It will be difficult for ODA and partners to differentiate between the natural and human causes of erosion.

Chapter 9 Section 9.2, p. 48

This section notes that a significant portion of the mercury in the Willamette Basin is deposited atmospherically. Figure 5-19 of the TMDL Technical Support Document indicates that 86 percent of surface runoff and 91 percent of sediment erosion may be affected by the natural and human activities within the forestry, agriculture and urban development land use areas.

ODA Comment: ODA does not have the capability to differentiate between natural and human sources of mercury. ODA will not be able to identify or separate the contribution of sediment and mercury of agriculture from other sources.

Chapter 10 Section 10.3, p. 69

DEQ notes that data was used to fit the Linear Mixed Effects model in order to better understand the TSS-THg and THg-TSS correlation, and that the correlation was strong.

ODA Comment: The desire to use a surrogate for mercury is understandable. However, the correlation may not be as strong as stated. In Appendix H, it shows few relatively high TSS concentrations. The highest is 60 mg/l and the next highest is 30 mg/l. We should be aware that wet month TSS concentrations likely often exceed 50 mg/l; these are likely underrepresented. Corresponding mercury concentrations for 60 mg/l and 30 mg/l TSS levels are 3.18 and 3.45 ng/L, respectively. This does not appear to show a correlation. Other TSS concentrations of 9-17 mg/l also had mercury concentrations near 3 ng/L.

No matter how well the correlation equations fit the existing data, the data set itself shows that it doesn't cover a wide enough range of TSS or mercury concentrations.

Given that it is difficult to differentiate between natural and human sources of mercury, and it is also difficult to differentiate between natural and human sources of sediment, it seems that the correlation between mercury and TSS is uncertain. This makes it very difficult for agriculture and other nonpoint sources to show whether we are meeting TSS and mercury targets set by DEQ.

However, due to the uncertainty, it does show the wisdom of DEQ working with agriculture and nonpoint source partners to show progress over time in an adaptive management process.

The calculated correlation equations are also likely to change over time, given that the sources of TSS will also change. DEQ may wish to consider recalculating the correlations on at least a ten year interval, or whenever the milestones are considered.

Table 10-2, p. 70

ODA Comment: ODA is unsure of the level of confidence for the reported TSS levels in Willamette Basin rivers and streams. In addition, ODA is unsure how to monitor the scope of agricultural activities and how they contribute to TSS, especially relative to other human and natural sources of sediment. ODA relies on the technical and human expertise of DEQ to design appropriate studies and to collect the necessary data to determine whether these interim surrogate allocations are being met.

Chapter 13 Section 13.3, p. 81

The document refers to the ODA Water Quality Management Program.

ODA Comment: ODA currently prefers to use the term “Agricultural Water Quality Program.”

p. 82

The document says “Implementation of the recommendations provided in area plans is voluntary, however ORS 561.191 stipulates that ODA must also adopt rules that protecting water quality in areas designated as exclusive farm use and other agricultural lands.”

ODA Comment: Please consider the following. “The Agricultural Water Quality Management Act (ORS 568.900 – 568.933) describes how ODA may implement agricultural water quality management plans and rules. ORS 568.909(2) states that once ODA has designated the boundaries of a plan area, ‘... the department shall develop and carry out a water quality management plan for the prevention and control of water pollution from agricultural activities and soil erosion. The department shall base the plan and rules adopted to implement the plan upon scientific information.’”

ODA has adopted rules that detail requirements on all agricultural lands. The rules describe the outcomes that must be achieved, providing flexibility on how to achieve compliance with the outcomes.

p. 83

In summary, the document describes the water quality threat of farm roads, and expects ODA to develop measurable objectives related to roads.

ODA Comment: ODA is not aware of data showing farm roads as a significant source of erosion and sediment. ODA requests that DEQ remove this reference to farm roads and the expectation to set measurable objectives for farm road pollution. ODA remains committed to working with all

our partners to prevent and control water pollution from soil erosion and associated agricultural activities.

p. 85

The document says "... to identify specific measurable objectives and timelines such as percent reduction in bare ground during wet months, along with associated implementation timelines for implementing best management practices and conservation practices that address runoff, sediment and erosion. ODA will work with Local Advisory Committees to report on these metrics during the biennial review process."

ODA Comment: Bare ground is a good indicator for the potential of erosion. However, ODA does not have the technical, financial, and human resources to measure bare ground at the landscape scale; ODA has typically referred to DEQ for this scientific expertise. However, ODA welcomes the opportunity to work with DEQ and partners to determine how to accomplish this in the future. Where conservation practice information is available, ODA will attempt to report these accomplishments through the area plan review process.

Chapter 13 Section 13.5, p. 123

The document says "... The timeline for attainment of water quality standards for this TMDL is expected to take multiple decades. The primary source of mercury in the basin is air deposition, and while efforts to reduce emissions in North America are ongoing, continued air emissions from global sources may offset these efforts. Other sources of mercury are varied and include buffering and re-release of mercury from the ocean, re-suspension of sediment-bound mercury in waterbodies, and changes in total mercury in groundwater. These legacy mercury deposits will take years to diminish. "

ODA Comment: ODA appreciates the DEQ acknowledgement that reducing mercury in the state's streams and rivers will be difficult given air deposition from global sources and legacy deposits.

ODA does not have the technical, financial, and human resources to widely monitor for landscape scale sources of mercury and sediment pollution from agricultural activities. ODA prefers to continue to rely on DEQ's scientific expertise to gather this information. ODA is ready to work with DEQ and all partners to reduce sedimentation and mercury concentrations in surface waters. ODA may be in a better position to support small-scale, small watershed or project-specific monitoring to help show progress and the effectiveness of conservation efforts.

Section 13.6, p. 124

The document says "... This monitoring strategy will be used to evaluate effectiveness of DMA and responsible person implementation strategies at meeting allocations and may require certain DMAs to collect data."

ODA Comment: ODA would need additional resources and expertise. ODA has typically relied on DEQ scientific capability and technical resources for monitoring and evaluation as the state's primary natural resource protection and monitoring agency, and ODA's preference is to continue to do so. However, ODA

is ready to work with DEQ and partners to improve the state's monitoring strategies and capabilities.

Section 13.8, p. 129

The document says “ ... The Oregon Department of Agriculture has primary responsibility for control of pollution from agricultural sources (ORS 561.191). This is accomplished through the Agriculture Water Quality Management program authorities granted ODA under Senate Bill 1010 adopted by the Oregon State Legislature in 1993 (ORS 568.900 to ORS 568.933 and OAR 603-090- 000 to 603-090- 0120).”

ODA Comment: Please consider this revision. ““The Oregon Department of Agriculture is responsible to prevent and control water pollution from agricultural activities as directed and authorized through the Agricultural Water Quality Management Act, adopted by the Oregon legislature in 1993 (ORS 568.900 to ORS 568.933). It is the lead state agency for regulating agriculture for water quality (ORS 561.191).”

September 6, 2019

**65. Keri Morin
Handaly,
City of
Gresham,
Oregon**

Andrea Matzke
Oregon Department of Environmental Quality 700 NE Multnomah Street, Suite
600 Portland, OR

Subject: Willamette Basin Mercury Total Maximum Daily Load (TMDL) Public
Comments Dear Ms. Matzke:

The City of Gresham appreciates the efforts that DEQ has taken to develop a
comprehensive Willamette Basin Mercury TMDL and Water Quality
Management Plan (WQMP) to address mercury sources within the basin. We
respectfully submit the following comments for consideration as DEQ solicits
public input prior to finalizing these documents.

Water Quality Management Plan

Protection of Human Health:

We support the goal of reducing human exposure to mercury and fish tissue
accumulation of mercury due to methylation of total mercury in water bodies. The
plan acknowledges that water quality standard compliance will take decades and
we agree. Furthermore, the scientific references acknowledge that even if mercury
air emissions were radically improved, the waterbody legacy loading is such that
bioavailability and bioaccumulation will not only continue, but also may increase
before they begin to decline. As such, our comment is:

The protection of human health would be far greater served if resources were put
towards fish tissue sampling in the State's impacted waterways from the State of
Oregon's budget. This should also be a national funding priority for EPA. Fish
tissue sampling information is limited and not readily publicly available. Public
information from the Oregon Health Authority relies on limited and outdated
information. Information about health risks from eating fish from Oregon's
waterways is not well marketed or even signed at many/most waterbodies. The
State of Oregon is not adequately funding fish science research to benefit people
or sensitive, threatened, or endangered species. The implementation of this plan
as written will still result in thousands of Oregonians being exposed to mercury,
so we ask the State to fund fish tissue sampling and marketing of information to
the public, especially those populations most at risk.

Without better fish tissue data on the fish that current consumption standards were
designed to protect – that being tribal consumption of salmon – regulated entities
are being asked to reduce mercury to meet a worst-case scenario for a target
organism, the northern pikeminnow, without adequate data demonstrating this
fish is being consumed. Rather than just rely on reduction of new mercury inputs,
the TMDL should include plans to ensure monitoring and education are part of
the State's strategy.

Controlling Sediment-Laden Runoff:

Given that the background and references cited acknowledge that atmospheric
deposition of mercury is a global air quality issue, we ask that efforts to regulate
the transport of sediment-bound mercury focus on demonstrated erosion
prevention and sediment control best practices currently used in urban

development and construction not only be specified for NPDES regulated permittees (MS4, 1200-C, 1200-Z), but also to the agriculture and forestry sectors covered within this TMDL plan. With forested land within the Willamette comprising almost 52% of the land use, and agriculture and grassland (a portion of which is agriculture) comprising 8% and 17%, respectively, controlling sediment movement from these areas is critical.

While agriculture and forestry are vital to Oregon's economy, so is the protection of our water quality, fishing, and recreational resources. We posit that both the agricultural and forestry sectors have both the knowledge, ability, and equipment to implement standard erosion practices, such as those described in the DEQ's 2005 Erosion Manual. Beyond just the prevention of erosion on all lands – be them agricultural, forest or urban – there also needs to be a focus on erosion control practices that will prevent sediment from being transported or eroded from the conveyance channels along private and public roads. Public and private ditches that are maintained in a way that leaves bare soil exposed may be one of the largest sources of sediment entering our streams and rivers, so ensuring that sediment is prevented and controlled in an enforceable manner from all land uses is critical.

We are asking for fair and equitable regulatory standards and oversight for all land uses (forestry, agriculture, and roadside ditches at a level similar to what is expected of urban areas) that includes requirements to deploy erosion protection and sediment control standards to prevent sediment from entering ditches, conveyance channels, pipes, or streams.

Specific Comments by Section:

13.2.1 The final sentence in this section is confusing. It states that the acute and chronic criterion are being met, but there is not an additional statement alluding to the fact that these levels are apparently not protective enough to prevent fish tissue levels from exceeding what is needed to meet the fish consumption standard that requires methylmercury to be below 0.04 mg/kg.

13.3.1.11 In the subsection talking about the “Six Minimum Measures for Stormwater”, this section should be updated to recognize that all MS4 permits (both Phase I and Phase II) include the 6 minimum measures. As the EPA document referenced in the first sentence clearly states, the inclusion of the 6 minimum measures in the Phase II permits was based on the success of these measures reducing pollutants in the Phase I permits. Because all MS4 permits include these measures, there is no need to differentiate between MS4 Phase I and Phase II permittees in the draft TMDL or the WQMP.

13.3.2.11.1 There seems to be an assumption in the way the WQMP is written that MS4 permittees do not currently apply the six minimum measures to areas that do not connect to their public pipes. In Gresham, the Stormwater Management Plan and city code is applied equally across our permit boundary. There are “natural areas” within the city boundary that are not subject to the six minimum measures, but that is because these areas are typically managed as upland or riparian forest that is, or will be, enhanced to meet the temperature TMDL goals and is not subject to

development (and therefore erosion control permitting and post construction standards would never apply unless they are needed during a restoration effort).

For DMAs that already apply all aspects of their Stormwater Management Plans (SWMP) – which integrate natural areas managed for temperature TMDL compliance, as well as the six minimum measures (including erosion control and post construction requirements) – we ask for an acknowledgement that the existing MS4 permit and SWMP already address nonpoint sources. Phase I communities have been adaptively managing their sediment control programs for the past 24 years, which include rigorous Erosion Prevention and Sediment Control inspection and enforcement programs as well as other sediment removal best practices such as pipe cleaning, catch basin cleaning, street sweeping, addition of vegetated stormwater controls and infiltration objectives. Moreover, we report all activities and sediment removal annually in reports submitted to DEQ.

Including new requirements to create a separate mercury plan/update of the existing Stormwater Management Plan outside of the typical permit renewal cycle is an inefficient use of already limited time for both MS4 and DEQ staff and serves no environmental benefit, as DEQ already has copies of our documents. We request that DEQ use the same permit renewal and reporting cycle required for the MS4 permit be utilized for any language updates needed to specifically satisfy the Mercury Water Quality Management Plan, as we do not see new or additional information that we have/can provide beyond what is extensively documented and reported to DEQ annually.

13.3.2.2.1 In general, there is not a compelling reason to split Phase I and Phase II permits into different sections. As stated before, the six minimum measures are part of both permits, so the programs that DEQ recognizes are effective at controlling sediment and mercury (e.g. erosion control inspections/enforcement, post construction stormwater standards, illicit discharge detection and elimination, etc.) are already being conducted to the maximum extent practicable. This section might be better simplified to eliminate what is currently under the MS4 Phase I heading, and then alter the text under the MS4 Phase II heading so that it reflects general versus individual permits. All the Phase I permits are individual permits, so the three bullets describing what would be in a mercury minimization plan would then be what Phase I communities would need to develop and submit to DEQ.

Many of the requirements currently listed under the MS4 Phase I subheading will require generation of reports that will not result in improvements to any of the programs currently being implemented to control sediment and mercury from the urban areas covered under MS4 permits. While collection of paired TSS-THg data is something that all Phase I communities have been, and will continue, doing, we currently do not have adequate data on the effectiveness of various BMPs at removal of mercury to do the calculations required to provide pollutant load reduction benchmarks or a wasteload allocation attainment assessment (WLAA). While that might be something we can do at some future date – once enough paired TSS-THg data has been collected to develop an acceptable relationship for using TSS as a surrogate measurement – the development of these reports is not something we have adequate data on BMP effectiveness to calculate

at this time. We request that this analysis be deferred until adequate data is collected to establish the statistical validity of using TSS as a surrogate in order to model benchmarks and the WLAA.

Surrogate TSS-THg Analysis

There are several grammatical items in this support document that would be good to update. Throughout this document, the use of the term “surrogate TSS-THg samples” is a confusing, since these are paired samples that were assessed to determine whether the correlation is strong enough that TSS could be used as an appropriate surrogate for THg.

1.5 Recommendations. In the example calculations at the end of this section, there appears to be a unit error. In example (1), the final TSS value of 4.272×10^{-14} mg/L does not make sense. This value is so small it would be immeasurable. In examples (2) and (3), the final THg values calculated are 8.38 mg/L and 7.48 mg/L, which would be extremely high. Our comment is that these units may need correction to ng/L.

We appreciate the opportunity to provide these comments in a collaborative effort to protect Oregonians from mercury exposure that puts them at risk. We are proud of and committed to implementing our city’s stormwater management plan in a manner that reduces sediment movement and controls its entry into our area streams. It is our goal to help DEQ focus on strategies that will optimize success towards the goal of human health protection which does not and will not occur from control of sediment alone. We support DEQ’s future work with the EPA to appropriate funding in a manner that is more proactive than reactive with real time publicly assessible data and better public outreach. We hope DEQ will consider our comments during finalization of the TMDL and WQMP.

Sincerely,

Keri Handaly
TMDL and MS4 Permit Coordinator
City of Gresham, Environmental Services

**66. Dennis
Hebard,
Oregon**

My name is Dennis Hebard, I own the Halfway mining claim at mile post 1 on Sharps creek and the Mining claims manager and board member for Bohemia Mine Owners Association.

I ask for reconsideration of the prohibition of suction dredges permitted under the 700PM in the URRW from the draft TMDL; "Studies in Oregon, California, Nevada, Wisconsin and Florida have shown that mercury in stream beds is disturbed, mobilized and methylated by suction dredging (Fleck, et al., 2010; Gray, Hines, Krabbenhoft, & Thoms, 2012; Humphreys, 2005; Marvin-DePasquale, et al., 2009; Marvin-DiPasquale, et al., 2011)." these do not apply to our streams.

All of these Study's concern Elemental Mercury in stream sediment, We don't find liquid mercury (see attachment) the presentations to the work group present a false picture and don't include remediation that shows BMD is no longer a source in fact presentation 6 from the march 21, 2018 meeting uses photos of the champion mine from 1993...

new sampling of the settling ponds show no detect for mercury in water samples (see 2018 report and xls attachments).

there is "no reasonable potential" suction dredges would increase the waste load allocation for streams in the URRW what could be considered; put on hold eliminating suction dredging for 2 years for more testing Consider 340-045-0105 in NPDES permitting (we are assigned a mixing zone) possibly keeping 700pm permit's at the same or current levels (21) the mining study's presented do not make up for a proper antidegradation review.

Dennis Hebard

700PM Permit Number: 30721
DEQ file# 120180

My name is Dennis Hebard,
I own the Halfway mining claim at mile post one on Sharps creek and Mining claims manager and board member for Bohemia Mine Owners Association.

I object or ask for reconsideration of the prohibition of suction dredges permitted under the 700pm in the URRW this is based on faulty data, lack of data for modeling, and not considering new data or proper reasonable potential/risk/antidegradation evaluation.

No legacy or historical liquid mercury contamination has been found, We don't find elemental mercury or staining on our gold during suction dredge mining!!!

Yes, low levels of mercury have been found at the champion mine; The Ambers & Hygelund (2001) study did not evaluate the species of mercury, The EPA (2005) (Weston; START-2) Preliminary Assessment and Site Inspection of the Upper Row River Watershed; Sampling including the area of the stamp mill found no Anthropogenic mercury sources, finding the primary ongoing

sources of mercury are waste rock piles and mineralized zones associated with epithermal vents.

Speciation testing showed strong-complexed species (mercurous chloride) and cinnabar (HgS) both species comprised up to 96% of the mercury detected in samples.

Source samples collected from the tailings pile at the 30-stamp mill contained concentrations similar to the waste rock samples analyzed.

This suggests that the mercury in the tailings is naturally occurring. EPA PA-SI rpt., Dec, 2005.pdf

In 2009 remediation was completed with removal of waste rock and a meandering wetland between settling ponds, testing over the next 5 years show a reduction of heavy metals and mercury by as much as 94%, sampling shows they found no elemental mercury source but rather the Ore minerals themselves of those the species of mercury HgS made up to 64% in stream sediment, HgS is generally resistant to chemical and physical weathering at nominal pH (Gray et al. 2003) and therefore not expected to be a primary source of dissolved Hg (II) ions in the aqueous stream and lake environment.

Champion Mine 2012 FINAL Monitoring Report 1-10-13.pdf

There has been no elemental or liquid mercury found during suction dredge mining!!! FS proud of work done on Champion mine remediation;

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3854334.pdf

The characterization of the Bohemia Mining District is misleading, even before the building of the Dorena Dam in 1949 the valley was a hub of activity, with farming, a railroad that hauled people, logs and mine ore. The valley closely resembled the nearby Mosby creek area that runs parallel just to the south, there is no dam and is mercury impaired on the 303d listings. After 70 years of blocking the 150 square mile upper Row river watershed the lake itself has become the source mercury. The BMD is on the City creek side of the mountains the champion saddle to the north isolates the champion mine. Bohemia saddle blocks it to the west, a majority of the BMD is on the North Umpqua drainage, The Vesuvius mine is mislabeled on many maps, it is on the side of a mountain, Fairfield peak, the lower Musick is an adit, they hit a spring after digging a short tunnel, this water is ground water, like most of the veins in the BMD the gold values were pinched off going west, it was never a mine just an adit.

None of the streams in the upper Row River, Sharps creek, Champion creek or Brice creek are impaired on the Cat 5 listings or Cat 4a having or needing a TMDL.

Low levels in sediments do not compare to the high levels seen from the Black butte, or Bonanza mercury mines, other than prior to remediation at the Champion Mine, based on the sampling mean of the sediments for the URRW, streams do not exceed limits of the fresh water risk assessment screening level 2 tables under Guidance for Ecological Risk Assessment,

<https://www.oregon.gov/deq/FilterDocs/GuidanceEcologicalRisk.pdf>

Nor does sampling follow the same downstream pattern as the mercury mines this is because cinnabar in the rock and sand does not break down or convert to Hg(II) ions, these particles skew sampling by what miners refer to as the “nugget effect” when sampling we don’t count the large pieces that may or may not be in the next yard of material. In the Ambers, USGS and others, samples were screened, with the other part of these put through a flail mill or ground and sieved to 100 mesh.

From the 2006 TMDL (using limited data sets n=4 from 2002-2003) the modeling of the annual THg load from the BMD was estimated as 0.12 kg/yr the annual THg from the Black Butte Mercury mine is 1.34 kg/yr this is 1100% higher than the BMD. Limited data sets are not enough for proper modeling not even the mass balance model.

The relative mean from sampling studies for the upper Brice, Sharps, Brice creeks Are at fairly low level’s until the downstream reaches of Row river as it enters Dorena lake with the highest levels, but these sediment samples from 2002 and earlier could be skewed by historical human activity or the breach in the lower settling pond reported by DEQ SAS staff site reconnaissance on Aug. 21st, 2002, an undiscovered mineralized zone (Pitcher Prospect). Much of the Ore was brought down the mountain, loaded and shipped by rail, a large lumber mill that once operated by the mouth of Sharps/Culp creek, etc...

The dispersion pattern is not consistent with historic liquid mercury use by miners, nether are the multiple dredge study’s referenced, in these studies the 2 % of elemental mercury not caught in the sluice was broken into smaller droplets (flouring) lost surface tension or more surface area allowing faster movement downstream, even so in the Yuba study they conclude “it would take 1,000,000 hours using an 8” dredge to compare to the natural particulate transport during an average dry year to affect the reservoir down stream”.

In the URRW, these are particles, studies such as the Forty mile river study, though not conclusive, show heavy metal particles drop out within 30 to 90 meters behind a dredge. The small amount of material we move with a four inch or less dredge will not accelerate down stream transport any faster than natural sediment transport.

Antidegradation considerations; Suction Dredge mining is not a new or increased discharge. No significant change ($p < 0.05$) will result in water quality due to our activity. Transport of mercury Hg(II) ions is primarily silt with vegetative matter, which we avoid.

Sincerely, Dennis Hebard 541-606-2872



Copy of 99.xls



CBA4hiS1Ysz7CpPbRz
ASn6rX.pdf

September 6, 2019

**67. Jodi Hack,
Oregon
Home
Builders
Association,
Oregon**

Oregon Department of Environmental Quality c/o Andrea Matzke, Basin
Coordinator
700 NE Multnomah St., Suite 600
Portland, OR 97232
Sent via email to: WillametteMercuryTMDL@deq.state.or.us

RE: DEQ Revised Willamette Basin Mercury TMDL

Dear Ms. Matzke:

Thank you for allowing an extension to provide comments on the draft Revised Willamette Basin TMDL on behalf of the Oregon Home Builders Association (OHBA). The bulk of the technical comments are identical to comments on the draft Municipal Separate Storm Sewer System (MS4) Phase II. It appears the proposed Water Quality Management Plan requires the same six storm water controls as the MS4 Phase II across a broader group of Designated Management Agencies (DMAs). Although the DMAs appear to have slightly more flexibility than the MS4 permittees, OHBA continues to have similar concerns as previously expressed. The proposed DMAs' post-construction stormwater standards:

- increase housing costs. The added requirement of post-construction stormwater controls on residential lots with a quarter acre of impervious area will increase the cost of housing. The engineering fees, materials and labor will potentially add up to \$20,000 per lot. A National Association of Home Builders (NAHB) study found that for every \$1,000 increase in the price of a home in Oregon 1,839 families are priced out of buying because they cannot obtain a mortgage. In addition, many of the DMAs are small jurisdictions with little to no capacity to comply with the required permitting of post-construction stormwater controls. This will increase the time involved in the permitting process, which adds more costs to the project, and is an unfortunate and unwelcome outcome given the unprecedented housing crisis facing Oregon.
- decrease housing production. By requiring more aggressive on-site treatment of stormwater, land that would otherwise be developable would contain stormwater facilities instead of housing. This has far reaching consequences as it impacts allowable residential density and buildable land supply.
- assumes away significant post-construction issues. For example, homeowners responsible for post-construction maintenance and operation of stormwater facilities – whether or not there is an organized community association – will not have the necessary expertise to keep even the most rudimentary stormwater facility functioning properly since the developer or builder will have moved on once the project is sold.
- treats spot lot infill development as though it was a traditional subdivision. This puts developers in a bind between state land use policy (which encourages if not insists upon infill) and the practical realities of complying with state environmental policy. For example, an identical house built in a subdivision after a new regulation comes into effect will cost significantly more than one built

before, but it cannot be sold for the higher cost because it will be appraised at the value of the lower cost existing neighboring houses.

- assumes numerous facts that are not in evidence. Such as the legal or environmental basis for non MS4 permittees obligation to address TMDLs. Or the efficacy of the parcel by parcel stormwater controls on mitigating the concentration of mercury in fish.

I. OHBA Comments on DEQ's Revised Willamette Basin Mercury TMDL

OHBA's concerns are focused around the post-construction stormwater controls.

a. Section 13.3.1.11 Local Governments: Cities and Counties

The mercury TMDL requirements have been expanded to cover more jurisdictions. Previously, the requirements applied to cities with populations greater than 10,000 and areas permitted under MS4. The proposal expands the requirements to cities with population greater than 5,000 and MS4 areas outside of urbanized areas. The hydrology of the rural areas is significantly different from urban areas. The statewide land use system restricts the amount of development and requires lower density in rural areas. This results in lower impacts from the impervious areas that is allowed in these basins.

Please provide a justification for expanding the requirements to rural areas.

b. Table 13.10 Minimum requirements for implementing the six stormwater measures - #6 Post- Construction Site Runoff for New Development and Redevelopment

Adopting a quarter acre threshold for project sites is extreme, exceeds the federal standard of one acre disturbed and conflicts with local design standards. While it may be appropriate for large metropolitan communities such as Portland where rates of redevelopment and population density are both higher than average, this proposal is inappropriate and unworkable for small communities. This mandate will impose new regulations on numerous small, low-risk sites with little potential for environmental harm.

We recommend removal of this requirement.

In conclusion, we believe that the draft permit is far more likely to result in higher housing costs and lower housing production than it is in cleaner water. We are asking DEQ to remove the additional post construction stormwater controls that are required for residential development beyond the MS4 permittees' boundaries.

OHBA remains committed to our legal obligation to comply with state and federal law and responsibility to protect Oregon's waters. While we cannot support or agree with this TMDL, we will commit to working productively with DEQ staff and our local government partners to improve water quality in Oregon.

Sincerely,

Jodi Hack, CEO OHBA

cc: NAHB

PN-1050 2.2.4.22

**68. David Mabe,
Bureau of
Reclamation
, Pacific
Northwest
Region,
Oregon**

United States Department of the Interior
BUREAU OF RECLAMATION
Pacific Northwest Region 1 150 Northwest Curtis Road
Boise, Idaho 83706-1234

SEP 06 2019

VIA ELECTRONIC MAIL ONLY

Ms. Andrea Matzke Basin Coordinator
Oregon Department of Environmental Quality 700 NE Multnomah Street, Suite
600
Portland, Oregon 97401 WillametteMercuryTMDL@deq .state.or.us

Subject: Proposed Willamette Basin Mercury Total Maximum Daily Load
(TMDL) and Water Quality Management Plan (WQMP)

Dear Ms. Matzke:

Thank you for the opportunity to comment on the Oregon Department of
Environmental Quality's (ODEQ) proposed Willamette Basin Mercury TMDL
and WQMP. The Bureau of Reclamation supports ODEQ's endeavor to address
water quality impairment in the Willamette Basin and elsewhere.

We write here to inform you that the Federal statutes requiring the construction,
operation, and maintenance of Scoggins Dam limit the authority of ODEQ to
require Reclamation to implement certain kinds of actions, including best
management practices. Within those confines, we look forward to working with
our partners and ODEQ to develop appropriate ways for Reclamation to
participate in ODEQ's TMDL and WQMP efforts.

Sincerely,

David Mabe
Deputy Regional Director

**69. Dennis
Hebard,
Oregon**

Remove the Mercury water quality standards, they are unattainable, they are 10 times lower than they need to be. its not backsliding, they are not lowered just removed, and would revert to EPA standards the EPA wanted them lowered for continued moneys for the coast sediment reduction study (logging roads?) DEQ had to send progress reports every year, they ended up taking away that money anyway.

Dennis Hebard

**70. Penny
Machinski,
Portland
General
Electric
Company.,
Oregon**

September 6, 2019 Submitted electronically via
WillametteMercuryTMDL@deq.state.or.us

Andrea Matzke Basin Coordinator
Oregon Department of Environmental Quality 700 NE Multnomah Street, Ste.
600
Portland OR 97232

RE: Comment on the Willamette Basin Mercury TMDL

Portland General Electric Company (PGE) appreciates the opportunity to review the draft Revised Willamette Basin Mercury TMDL (draft TMDL). PGE is committed to conducting its operations in a manner that protects water quality in the Willamette Basin and across the State of Oregon, and believes that a reasonable and science-based regulatory structure is key to ensuring both clean water and a stable economy. With that in mind, PGE offers the following comments on the draft TMDL.

PGE is concerned that the strategies outlined in the Water Quality Management Plan (Section 13) will not be successful in reducing mercury loads by the 88 percent required to achieve the target methylmercury fish tissue criterion cited in the draft TMDL. According to Table 6-7, more than 90 percent of the current mercury load is from air deposition or naturally-occurring mercury in soils, and more than 30 percent of that mercury originates outside of Oregon. It appears from the table that less than 5 percent of the current load is from sources currently regulated by the Oregon Department of Environmental Quality (DEQ) water quality program. As such, PGE encourages DEQ to acknowledge in the final TMDL that the criterion is not achievable and to immediately initiate a use attainability analysis (UAA) to support a revised methylmercury criterion. PGE would prefer that DEQ refocus expectations on a more realistic future state now, rather than waiting for one or more 5-year implementation planning cycles to be completed.

In addition, PGE offers comments on several specific items in the draft TMDL:

- Table 10-1 includes impoundments as a nonpoint source of mercury loading. Although mercury may be present in the sediments captured behind an impoundment, neither the impoundment itself nor affiliated dam operations and maintenance are sources of mercury. While dam operations may affect methylation rates, EPA's TMDL rules define loading as introducing matter into a receiving water. Since impoundments do not introduce matter into the waterbody, it seems a mischaracterization to include the impoundment as a source of loading. (40 CFR 130.2(e))
- Section 13.3.1.22 of the draft TMDL targets only impoundments owned by the four largest reservoir owners, regardless of impoundment size. Ownership is not relevant, and no justification is provided for targeting the impoundments owned by these four entities, rather than, for example, focusing on the largest impoundments, regardless of ownership.

-
- Appendix E includes PGE in the list of Designated Management Agencies (OMA) and responsible persons but the table does not differentiate the two. Also, in the text (section 13.3.1.22), PGE is described as a OMA. PGE is not a public entity that has regulatory authority over other entities, and does not meet the definition of a OMA as defined in OAR 340-042-0030(2).
 - Table 10-1 assigns an 88% reduction target for General Nonpoint Sources and Background, which is intended to capture a variety of sources, including impoundments. The draft TMDL is unclear as to whether each of these sources will be expected to meet the 88% reduction target, or whether achievement of the sector as a whole be sufficient. And consistent with our comment above, because impoundments do not contribute any mercury load to streams within the Willamette Basin, it is unclear how this reduction could be applied to an impoundment.
 - Section 13-.1.1. indicates that DEQ may determine that a nonpoint source implementation plan is unnecessary based on de minimis mercury loads, but is vague on the criteria that might be applied. The lack of clarity makes long-term compliance planning difficult for regulated, or potentially regulated, entities.
 - Table 13-19 lists best management practices for reservoirs. However, the table is not referenced in the text, and it is unclear whether the listed strategies must be considered by the impoundment owners, included in the TMDL implementation plan or are merely included in the draft TMDL as examples.
 - Section 12.3.1.22 establishes expectations for actions to be undertaken by dam owners and operators, including a methylation assessment and implementing best management practices. Please note that the regulatory authority for the Clackamas River Hydroelectric Project (the Project) is the Federal Energy Regulatory Commission (FERC). Any measures at the Project to implement the TMDL may be subject to review and approval by FERC.

Sincerely,

Portland General Electric

Penny Machinski
Senior Environmental Engineer Portland General Electric

**71. Jenna
Jones,
League of
Oregon
Cities,
Oregon**

September 6, 2019

Andrea Matzke, Basin Coordinator DEQ Water Quality Division
Oregon Department of Environmental Quality 700 NE Multnomah Street, Suite
600
Portland, OR 97232

Comments sent electronically to: Willamette mercuryTMDL@deq.state.or.us

Ms. Matzke,

The League of Oregon Cities (LOC) appreciates the opportunity to provide comments on the public review draft of the Draft Revised Mercury Total Maximum Daily Load and Water Quality Management Plan for the Willamette Basin (dated July 3, 2019). In addition, we want to extend our appreciation to the advisory committee for the time and effort contributed to this process. The LOC also wishes to express our support for the comments submitted by the Association of Clean Water Agencies (ACWA) dated August 29, 2019. ACWA and LOC represent several shared-members and we appreciate the careful thought and time that ACWA has put into the comments submitted on behalf of their members, including a number of cities.

Our main comments can be simplified to the following:

- The LOC strongly encourages the department to consider a more flexible model and approach that we are confident will result in better outcomes and compliance. We would like to see a “right-size” approach that reflects the capacity of small cities to effectively engage in this work, meet better outcomes and improve compliance.
- The LOC is requesting the creation of a stakeholder group that will work cooperatively to develop a workable, right-sized approach and Water Quality Management Plan that still aims to achieve water quality improvements.
- Finally, the LOC would appreciate the opportunity to meet with the department to talk about opportunities to establish a funding source (non-MS4 fee funds) that can provide technical assistance, training and support to small communities who will very likely need financial and technical assistance in order to successfully administer TMDL requirements. We believe the provision of technical assistance should be provided through a third-party as opposed to coming directly from DEQ, as DEQ’s role is appropriately regulatory.

The LOC represents all cities in Oregon. Our members vary greatly in size, demographics and their budgetary capacities. Many of our members face significant budgetary limitations due to a combination of costs, largely due to PERS rates and healthcare, and Oregon’s antiquated and restrictive property tax system which significantly constrains revenue generated for core local services. These challenges hit smaller communities especially hard. In addition, cities face mounting pressures to address the many pressing needs of their communities and to be able to prioritize and fund those needs that have the most significant impact to the lives of our citizens.

Housing affordability is a priority for many of our communities and has been indicated as a priority at the state level through the governor’s office, state agency efforts and recently passed legislation. The comments below reflect our concerns over the policy and resource conflicts created through competing priorities and policy direction. With that said, we recognize that the Department of Environmental Quality (DEQ) must implement a mercury TMDL and we are not

requesting that smaller communities be exempted from having a role. What we are asking is for DEQ to consider a “right-size” approach that accounts for the organizational capacity, financial resources, and technical staffing expertise of small cities.

It is the LOC’s understanding that several small cities will be required to serve as designated management agencies (DMAs) and responsible persons under the draft TMDL. It is also our understanding that the decision to require small cities, with populations of 5,000 or greater, to serve as designated management agencies, came later in the process of developing the draft TMDL. With that being said, we would encourage DEQ to develop a stakeholder group, representative of small city, district and county interests, that can work cooperatively and constructively with the state to develop a framework for the Water Quality Management Plan and find ways to allow for added flexibility, feasibility and can be implemented by small communities. We believe this will allow for a more appropriate “right-size” approach that will result in targeted, and more focused efforts, and real results for the improvement of water quality.

To better articulate the fiscal challenges of some of the cities that are being required to serve as designated management agencies, the below excerpt is from the Fiscal Year 2018-19 Budget Message document from one of the DMA cities (as listed in Appendix E of the draft TMDL):

Excerpt: “...our city has struggled to find the funds to maintain its assets, keep its Water enterprise fund in a positive financial position, and provide services to its citizens. In the last fiscal year, the Council, current management, and staff have worked diligently to strengthen the financial position of the city, complete needed repairs and maintenance on its real properties and infrastructure and provide consistently high level of services to its citizens. ...We estimate that the General Fund will receive a total of approximately \$369,000 in property taxes for city operations for FY 2018-19.”

This example is not intended as an argument to exempt small communities from playing a role in desired water quality improvements for mercury. It is intended to highlight that for successful implementation of the proposed requirements, there needs to be a more appropriate, flexible, right-size approach; paired with funding resources to provide needed assistance.

Many of the cities that will be financially impacted if the TMDL requirements are approved as drafted are not currently subject to MS4 Phase I or Phase II permitting requirements. Placing excessive requirements on these communities is likely to result in non-compliance. While we do not doubt that these cities will want to be compliant with the requirements, if they do not have the expertise or resource to perform the work being required, it is likely to result in less than desired outcomes for all sides. Section 13.3.1.11.2 describes “the requirements for portions of cities and counties that have stormwater discharges within the Willamette Basin and are not required to have MS4 permit coverage.” The draft TMDL further indicates that estimated mercury loads from all combined, non-permitted urban area stormwater discharges is approximately one percent of the overall load in the Willamette Basin.

However, the TMDL requires a 75 percent reduction of mercury loads across this sector, which appears to be weighted beyond the actual impact of the sector. The requirements under sections 13.3.1.11 and 13.3.1.11.2 (Tables 13-10 and 13-11) include six stormwater control measures for non-permitted DMAs, including cities within the basin that have a population over 5,000. Again, the draft TMDL has the effect of requiring MS4 Phase II NPDES permits for communities that would not otherwise be subject. The six measures listed in Table 13-11 include pollution prevention and good housekeeping for municipal operations, public education and outreach, public involvement and participation, illicit discharge detection and elimination, construction site runoff control and post-construction site runoff for new development and redevelopment. The draft TMDL indicates that “these communities will need to either develop a new TMDL implementation plan or update their existing TMDL implementation plan to fully incorporate the six stormwater measures for mercury and sediment reduction.”

The LOC is highly concerned over the mandate and the additional cost and strain on resources that seems likely to occur as a result of the requirements listed in Table 13-10. Many of the cities proposed to be included as DMAs under the draft TMDL have budget limitations and do not have the staffing that will be required to successfully implement the requirements absent shifting of those limited resources away from other community needs and priorities or hiring additional staff. The LOC believes the following requirements create considerable additional cost and resource strain for cities subject to these new mandates:

- Requirement for Illicit Discharge Detection and Elimination (IDDE): “The IDDE program must prohibit non-stormwater discharges into the stormwater conveyance system through enforcement of an ordinance or other legal mechanism, including appropriate enforcement procedures and actions to ensure compliance.”
 - o LOC Concerns: This level of enforcement will require staffing resources beyond the existing capacity of many communities. We frequently hear about communities lacking resources to hire necessary police and public safety personnel and we urge the state to work with cities to help mitigate these impacts. Other states have invested in the outcomes they seek as related to water quality improvements, while Oregon has struggled to fund even basic programmatic and staffing needs for natural resource agencies and functions. We are not disagreeing that water quality improvements are important, and cities already invest significantly in this regard. However, many cities simply do not have funding to continue to meet additional new mandates. Services will need to be shifted, cut or local communities will need to seek additional revenue to implement these requirements. We support ACWA’s suggestion to provide a suite of options for smaller cities and counties to consider. A right-size approach would not only be more feasible and help to address resource constraints, but would also likely result in better outcomes, including effective programs and compliance. We believe that meaningful stormwater improvements can occur without overly-prescriptive requirements that will be difficult to deliver on.
- Requirement for Construction Site Runoff Control: “To further control erosion related to construction sites, the DMA must require construction site operators to complete and implement an Erosion and Sediment Control Plan for construction project sites...that result in a minimum land disturbance of 21,780 square feet (one half of an acre) or more and are not already covered by a 1200-C

permit.” The DMA must also require DMAs, sediment controls, erosion controls, and waste materials management controls to be used and maintained at all qualifying construction projects.

o LOC Concerns: The construction site runoff will also require additional staffing and expertise that many of these communities likely do not currently have. If the proposed requirements for ensuring compliance are adopted in the final TMDL, the LOC requests that DEQ work with LOC and other local government associations to establish a funding source that can help provide needed technical assistance and training to communities.

- Requirement for Post-Construction Site Runoff for New Development and Redevelopment: “The DMA must target natural surface or predevelopment hydrologic function to retain rainfall on-site and minimize the offsite discharge of precipitation utilizing stormwater controls that infiltrate and evapotranspire stormwater.” For project unable to fully retain rainfall/runoff from impervious surfaces on-site, the remainder of the rainfall/runoff from impervious surfaces must be treated prior to discharge with structural stormwater controls. These structural controls should be designed to remove, at a minimum, 80 percent of the total suspended solids.

o LOC Concerns: It is unclear to us how this requirement could potentially impact housing costs, but we do anticipate some housing cost increases associated with this requirement. Cities and the state are facing significant pressures to address Oregon’s affordable housing needs. We have been asked, through legislation, to look at ways to decrease housing costs including potential waiver of system development charges. The state has sent cities a very clear message that housing affordability should be a priority. This requirement will undoubtedly increase cost for housing, and we urge DEQ to calculate potential cost impacts and share that data with local governments, the governor’s office and corresponding agencies to balance what appear to be competing priorities and mandates that cities are being required to implement.

In addition, the LOC again reiterates its support of the ACWA Comments dated August 29, 2019, and specifically would like to echo concerns over the underlying assumptions based on consumption of Northern Pikeminnow. We would like to have additional information regarding the use of this fish species as the water quality standard is based on fish consumption of 175 grams per day (equal to 30, 6-oz servings a month).

Thank you for your consideration of these comments. We welcome additional conversation with DEQ to discuss the concerns indicated above. We look forward to further work that we hope will result in creating a more workable solution while ensuring that water quality improvements are achieved.

Memorandum

**72. Eric D. Metz,
Oregon
Department
of State
Lands,
Oregon**

To:
Andrea Matzke, Oregon Department of Environmental Quality
From:
Eric Metz, Oregon Department of State Lands
Date:
September 6, 2019,
Re:
Public Comments for the Revised Willamette Basin Mercury TMDL:
Draft for Public Comment, dated July 3, 2019

Thank you for the opportunity to review the Revised Willamette Basin Mercury TMDL: Draft for Public Comment, dated July 3, 2019. Following are the comments offered by the Oregon State Lands

13.3.1.6 Oregon Department of State Lands

Oregon Department of State Lands is named as a Designated Management Agency because DSL manages significant tracts of land and issues permits for earthwork below ordinary high water of waterways and in wetlands in the Willamette Basin.

DSL has both a regulatory and a proprietary role regarding the land within the Willamette Basin. DSL issues two types of permits and authorizations related to its regulatory and proprietary roles: removal-fill permits for removal or fill activity in waterways and wetlands, and proprietary waterway authorizations for use of state-owned waterways.

In its regulatory role, DSL is responsible for administering Oregon's Removal-Fill Law which was enacted in 1967 and includes the following responsibilities:

- Protect, conserve and make best use of water resources
- Protect public navigation, fishery and recreational areas
- Ensure that activities of one landowner don't adversely affect another landowner
- Minimize flooding, improve water quality, and provide fish and wildlife habitat.

For many removal-fill permits, applicants also must obtain a corresponding permit from the U.S. Army Corps of Engineers under section 404 of the federal Clean Water Act. For these permits, DEQ issues water quality certifications under section 401 of the CWA.

In its proprietary role, DSL owns certain state-owned parcels within the Willamette Basin, including:

- Approximately 2,900 acres of land which includes both the surface and underlying mineral rights
 - Approximately 12,100 acres of mineral rights which occur on land on which the surface is owned by another entity (commonly termed "split estates")
 - Submerged and submersible land underlying:
 - o The Willamette River from its confluence with the Columbia River at River Mile (RM) 0.0 to RM 187 at the confluence of the Coast and Middle Forks of the waterway;
-

-
- o The McKenzie River from its confluence with the Willamette River at RM 0.0 to RM 37 at Dutch Henry Rock; and
 - o Tidally influenced waters.

As the manager of both upland parcels and mineral rights within the Willamette Basin, as well as submerged and submersible land underlying the Willamette River, DSL is responsible for authorizing uses placed on these holdings. Mercury may occur, or is likely or known to occur on the following types of state-owned land in the following ways:

Draft TMDL for Public Comment July 3 – September 3, 2019

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- Upland parcels: primarily derived from local and distant sources by atmospheric deposition and associated with possible underlying mineralization.
- Submerged and submersible land: via atmospheric deposition and from runoff from upland and industrial discharges, and prior mining operations.
- Mineral Rights: as an accessory constituent of or used to process some mineral deposits.

Measurable Objectives, Milestones, and Water Quality Management Plan Reporting Requirements

DSL will continue to implement the management strategies identified in Table 13-6 in order to ensure that all persons applying for, and holding authorizations to use, state-owned land are implementing best management practices that reduce runoff, sediment and erosion.

In addition to the strategies identified in Table 13-6, DEQ encourages DSL to work with ODA and other watershed partners to conduct focused outreach and education that includes the water conveyance systems that are identified as responsible persons in this WQMP.

DSL is required to develop a TMDL implementation plan for the Willamette Basin for review and approval by DEQ within 18 months of the issuance of this TMDL. This plan must include specific measurable objective(s) and timelines for implementation and may include specific conditions that DSL and/or DEQ (through section 401 conditions) utilize to avoid soil erosion and sedimentation. DSL will also take part in the Willamette Basin five-year review. For more information about five-year reviews, see section 13.4.

Note: What was the source of the information contained in Table 13.6? We can't say that we speak specifically to any of these strategies as part of our proprietary authorizations. We use our standard DOJ approved templates for leases, easements and registrations. Conditions include being in compliance with all other local, state and federal laws; not releasing hazardous materials, keeping structures in a state of good repair; etc. However, we don't have authorizations specific to the Willamette Basin (except for Portland Harbor) or to mercury loading.

September 6, 2019

**73. Sunny
Simpkins,
Multnomah
County
Drainage
District,
Oregon**

VIA EMAIL ONLY: WillametteMercuryTMDL@deq.state. or.us
Andrea Matzke, Basin Coordinator
Willamette Basin Mercury Total Maximum Daily Load Oregon Department of
Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, OR 97232

RE: Comments Response to the Revised Willamette Basin Mercury TMDL-Draft
for Public Comment (July 3, 2019)

Dear Ms. Matzke:

On behalf of Multnomah County Drainage District No. 1("MCDD"), Peninsula
Drainage District No. 1("PEN 1"), Peninsula Drainage District No. 2 ("PEN 2"),
and Sandy Drainage Improvement Company ("SDIC"), collectively the
"Districts," the following are comments responding to correspondence, dated June
7, 2019, the Districts received from Ms. Priscilla Woolverton and to the Revised
Willamette Basin Mercury TMDL-Draftfor Public Comment (July 3, 2019)
("Proposed TMDL") 1 issued by the Oregon Department of Environmental
Quality ("DEQ") .These Districts have been categorized as water conveyance
entities that the Proposed TMDL has identified as responsible persons, nonpoint
sources. Public comments to the Proposed TMDL were originally due by
September 3, 2019, which has since been extended to September 6. The Districts
appreciate the extension and the public outreach efforts of DEQ to date.

In summary, there is no support in the Clean Water Act ("CWA") and Oregon
Water Quality statutes for the proposal to regulate "Water Conveyance Systems"
as nonpoint sources or as "responsible persons." Even if such legal authority
exists, the Districts' operations do not fit within the regulatory scheme of the
Proposed TMDL. Therefore, the Districts respectfully request that DEQ remove
them from being considered regulated responsible persons, nonpoint sources under
the Proposed TMDL. Finally, the public review and comment period of the
Proposed TMDL is unprecedentedly short, giving the Districts inadequate time to
meaningfully review and respond to the proposal. The Districts reserve the right
to submit additional comments.

The comments in this letter are in addition to those submitted by the Oregon
Water Resources Congress ("OWRC"). As a member of OWRC, the Districts also
signed onto/contributed to its comments dated September 6, 2019.

BACKGROUND

I. Districts' Flood Management System

The Districts help protect lives and property from flooding by operating and
maintaining flood management systems for nearly 13,000 acres of land along the
Columbia Slough and the lower Columbia River. The Districts do not withdraw

water for landowners' use. Over the course of their history, the Districts' system has evolved into one that primarily provides urban flood management.

The Districts maintain 27 miles of levees and 45 miles of surface water conveyance systems, including primary and secondary features, and operate 12 pumping facilities. Surface waters within the Districts include primary water bodies, private water bodies, and secondary ditches. Primary water bodies are the named rivers, lakes, slough, and canals (e.g. Columbia River, Blue Lake, Columbia Slough, and Peninsula Drainage Canal). Private water bodies include ditches and ponds that are not under the jurisdiction of the Districts (e.g. Heron Lakes Golf Course ponds). Secondary ditches are surface water conveyance systems that carry water to the primary water bodies.

The Districts operate and maintain the flood management system pursuant to the United States Army Corps of Engineers ("USACE") under Public Law (PL) 84-99 and the National Flood Insurance Program ("NFIP") of the Federal Emergency Management Agency ("FEMA"). Under the regulation and guidelines of USACE's levee safety and FEMA's NFIP, accredited levees must at least meet design, operation, and maintenance standards for the protection against a 1%-annual-chance flood.

In order to meet these federal levee safety standards and protect lives and properties, in the past, the Districts conducted in-water dredging to remove accumulated sediment an average of every 3 years. As with any in-water work, the Districts complied with all relevant law. This included the dredge and fill regulatory requirements and permits administered by the USACE and Division of State Lands ("DSL"), 401 Water Quality Certification ("WQC") by DEQ, and the City of Portland Erosion Control Manual. Given the fact that the Columbia Slough and its tributaries are a remedial site subject to a Remedial Action Record of Decision, the Districts' in-water work is not only already regulated, but it also resulted in a net benefit to the environment by removing previously-deposited pollutants from the waterways. The Districts' work complies with an DEQ-approved Environmental Management and Testing Plan for Ditch Maintenance (the "EMP").

Given recent evaluations, however, the Districts' need for future dredging is questionable at best.

II. Proposed TMDL Includes Regulation of Water Conveyance Systems

The Proposed TMDL lumps Water Conveyance Systems as "nonpoint sources" of mercury in the Willamette basin. The basis includes DEQ's finding that in urban areas "(m)ost of the mercury load from this source is from atmospheric deposition but controlling surface runoff and soil erosion will reduce the mercury loads from these urban areas from entering the river and streams." (Proposed TMDL at 64-170).

DEQ also determines that Water Conveyance Systems:

"influence the quantity and timing of sediment delivery to downstream river reaches. Return flows can enter waters of the state through ditches and pipes. Consequently, owners and operators of these systems are included as responsible persons in this WQMP because maintenance and management of these systems can impact sediment transport and erosion. Such systems are responsible only for sedimentation resulting from conveyance systems, not from upland agricultural activities." (Proposed TMDL at 107-169) (emphasis added) .

Finally, DEQ identifies mitigation measure to be imposed on Water Conveyance Systems to include the management of "upland conveyance system infrastructure, for example, roads, pumps, etc. to prevent soil erosion, and sediment delivery to waterbodies." (Proposed TMDL at 110-169).

DEQ recognizes that any in-water work by Water Conveyance Systems are also currently "regulated by multiple state and federal agencies, including Oregon Water Resources Department, DSL, USACE, and DEQ's 401 water quality certification program and that "[f]or projects and activities that are exempt or not permitted by the [these] agencies and programs ***, owners and operators of water conveyance systems must implement similar best management practices to reduce sediment and erosion, in order to meet the TMDL requirements." (Proposed TMDL at 107-169).

COMMENTS

I. Proposed TMDL Lacks Legal Authority

There are several aspects of the Proposed TMDL regulation of Water Conveyance Systems that wholly lack legal support under federal CWA and state water quality law. The Proposed TMDL is based on the CWA. The CWA delegates to the states authority to develop TMDLs based on state water quality standards, which could be more stringent than federal standards. However, the Proposed TMDL's regulation of Water Conveyance Systems as responsible persons, nonpoint sources goes beyond the regulatory jurisdiction of the CWA and the optional stringency a state may have for its water quality program. For the reasons discussed below, DEQ must remove Water Conveyance Systems from being regulated nonpoint sources.

A. Point of Regulation is Triggered When Pollutant Enters Regulated Water, Not After

Federal CWA and state water quality law differ on what types of waterbodies fall under their jurisdiction. The CWA broadly covers all "navigable waters" and "waters of the United States" (collectively "WOTUS"), while state law captures "waters of the state," that are beyond the federal WOTUS, such as groundwater. But, regardless of whether the waterbody is regulated by federal or state law, what remains clear is that the point of regulation is triggered when pollutants first enter the regulated waterbodies.

Nothing in the CWA allows a state to implement TMDL water quality regulation to address pollutants that have already been deposited in the regulated waterbody.

Yet, DEQ does just that when it determines that "[m]ost of the mercury load from [nonpoint sources] is from atmospheric deposition" and then passes the bulk of the responsibility onto Water Conveyance Entities to address the pollutant depositions by imposing controls for in-water soil erosion and sediment transport. (Proposed TMDL at 64-170).

DEQ's proposed regulatory scheme has no support in the CWA, which requires regulation to occur when pollutants first enter a regulated waterway. Case law on navigable waters and the regulatory history of the WOTUS rule cannot be any clearer on this principle. State water regulations that implement TMDL must also stay within this jurisdictional principle-regulation begins at the point the pollutant enters regulated waterways, not after. Thus, the Districts oppose any effort by DEQ under the Proposed TMDL to broaden the point of regulation because such an expansion is not a type water quality standards that the CWA allows DEQ to have as an enhanced stringency. 40 CFR Part 131.

B. The Districts Are Not "Source" and "Nonpoint Sources" of Mercury Pollution

DEQ's determination that Water Conveyance Systems are "nonpoint sources", and therefore are "sources," are also not authorized by law. DEQ describes the role of Water Conveyance Systems as "sources" and "nonpoint sources" as follows:

"As noted in OAR 340-042-0040(4)(f) and OAR 340-042-030(12), a source is any process, practice, activity or resulting condition that causes or may cause pollution or the introduction of pollutants to a waterbody. This section identifies the mercury sources and estimates, to the extent existing data allow, the amount of actual mercury loading from existing sources. Sources of mercury to streams include point and nonpoint sources. Specific sources are described below and are subsequently assigned allocations. By mass, nonpoint sources are the major sources of mercury in the Willamette Basin. Nonpoint sources are diffuse or unconfined sources of pollution where wastes can either enter, or be conveyed by the movement of water, into waters of the state' OAR 340-41-0002 (42)." (Proposed TMDL at 46-169) (Emphasis added)

In so doing, DEQ has to rely solely on the state's regulatory definitions of the "source," and "nonpoint sources" because those terms are not defined under the CWA.

CWA regulates pollution by imposing mandates on two categories of sources, "point sources" and "nonpoint sources." CWA defines a "point source" as "any discernible, confined and discrete conveyance, ****, from which pollutant are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture." 33 USC 1362(14) (Emphasis). Courts have found that the term "nonpoint source" is a broad category of other forms of water pollution that do not otherwise fall within the point source definition nor the National Pollutant Discharge Elimination System ("NPDES") permitting program. Nat'l Wildlife Fed'n v. Gorsuch, 693 F.2d 156, 166 (D.C. Cir. 1982). DEQ's definition of "nonpoint source" does not support its application to Water Conveyance Systems under Proposed TMDL. The definition is limited to

pollution being introduced "into" the regulated waterbody, rather than pollution that are already in the regulated waterbody. See, OAR340-41-0002(42) (defining, "Nonpoint Sources" to mean "any source of water pollution other than a point source. Generally, a nonpoint source is a diffuse or unconfined source of pollution where wastes can either enter into waters of the state or be conveyed by the movement of water into waters of the state." (Emphasis added).

Yet, DEQ holds Water Conveyance Systems accountable as nonpoint sources on the finding that these systems alter the quantity and timing of sediment-that have already been deposited into the regulated water by some other sources-by delivering it to downstream regulated waterbodies. DEQ's position is not supported by its own regulatory definition as it looks to mandate controls of pollution that are already in the water caused by sources beyond the control of Water Conveyance Systems-e.g., atmospheric deposition. DEQ has more or less admitted to this tenuous legal support in the contradiction of lumping Water Conveyance Systems into the nonpoint source category of the Proposed TMDL: "DEQ's expectation is that all applicable management strategies will be applied to the controllable portions of each source in order to achieve each responsible entity's portion of the aggregated reductions needed. Nonpoint sources are the ones most affected by these mixtures of sources. These were not separated out to identify specific sources within the aggregated allocation. Rather, the broad category captures 'atmospheric deposition' through the source categories described in the TMDL Technical Support Document as 'sediment erosion,' 'surface runoff' and 'atmospheric deposition direct to streams.'" (Proposed TMDL at 61-169).

Because the Water Conveyance Systems are not "nonpoint sources," they also cannot be "sources" under DEQ's regulation. Atmospheric deposition of mercury is the source of pollution into the regulated waterbody. Merely conveying water (which may contain mercury) between points in a conveyance system does not add or introduce pollution to a regulated waterbody.

The case law that leads to and supports the Water Transfer Rule issued by the US Environmental Protection Action, including Catskill Mountains Chapter of Trout Unlimited, Inc. v. EPA, 846 F3d 492, (2d Cir. 2017), provides a clear explanation to why Water Conveyance Systems do not add pollutants into a regulated waterbody. While the Districts acknowledge these legal authorities apply to NPDES point source permitting requirements, the rationale and finding by such a rule and set of cases-that there is no addition of pollutant by water conveyances-is apposite in delineating Water Conveyance System's role as nonpoint "sources." For these reasons, the Districts respectfully rejects the Proposed TMDL categorization of Water Conveyance Systems as "sources" of mercury in the Willamette Basin.

C. No Authority to Designate Water Conveyance Systems as "Responsible Persons"

The Proposed TMDL seeks to regulate Designated Management Agencies ("DMAs") and "Responsible Persons." DMAs are defined by DEQ's regulation as "a federal, state or local governmental agency that has legal authority of a sector or source contributing pollutants and is identified as such by the Department of Environmental Quality in a TMDL." OAR 340-042- 0030(2). A regulatory

definition for "Responsible Persons" does not exist. At most, "Responsible Persons" are only referenced in relation to DMAs in the establishment of water quality management plans:

(G) Identification of persons, including Designated Management Agencies (DMAs), responsible for implementing the management strategies and developing and revising sector-specific or source-specific implementation plans.

"(I) Schedule for preparation and submission of sector-specific or source-specific implementation plans by responsible persons, including DMAs, and processes that trigger revisions to these implementation plans." OAR 340-042-0040. (Emphasis added).

Yet, in the Proposed TMDL, DEQ deems "[a] responsible person is an entity identified in a TMDL that has responsibility to meet assigned allocations and/or surrogate measures." (Proposed TMDL at 77-169)

The regulations tie Responsible Persons to "management strategies," which again, focuses on controlling pollution being added to regulated waterbodies. OAR 340-042-0030(6) (defining "management strategies" as "measures to control the addition of pollutants to waters of the state and includes application of pollutant control practices, technologies, processes, siting criteria, operating methods, best management practices or other alternatives.") (Emphasis added). This definition calls into question DEQ's proposal to hold Water Conveyance Systems accountable for pollutants already in regulated waterbodies.

II. Districts' Operation Falls Outside of Proposed Regulatory Scheme

Even if DEQ has authority to impose the Proposed TMDL regulatory scheme on the Districts as a nonpoint source, the Districts' operation falls outside of the need for regulation. The Districts' day to day operations in the water generally consists of removing debris and vegetation from culverts or pinch points in the system. Furthermore, the Districts' system is a slow moving, hydraulically flat system that operates like a reservoir, and therefore, natural erosion is limited. Recent hydraulic modeling has indicated that dredging does not significantly impact the conveyance function of the waterways in the Districts. Therefore, the Districts infrequently dredge or perform in-water maintenance work. In addition, the conveyance system that the Districts are statutorily required to maintain for flood management is highly vegetated. The presence of vegetation inhibits erosion of the banks.

To the extent that the Districts does any sediment in-water work, such work regulated by relevant permitting agencies or DMAs. The in-water work conducted pursuant to the EMP have already applied Best Management Practices (BMPs) that mitigate any downstream sediment transport concerns.

First, pursuant to the Proposed TMDL, such Districts' work already meet TMDL requirements:

"Water conveyance systems, including those that are managed for irrigation and drainage, are currently regulated by multiple state and federal agencies, including Oregon Water Resources Department, DSL, USACE, and DEQ's 401 water

quality certification program. For most waters, a DSL permit is required if a project will involve 50 cubic yards of fill and/ or removal within the ordinary high-water line of a stream; this requirement also applies to some ditches. Projects that require a DSL removal-fill permit may also require a Clean Water Act Section 404 permit from the USACE. ***

Implementing the requirements and conditions of these permits and Water Quality Certifications include best management practices that meet the TMDL requirements. For projects and activities that are exempt or not permitted by the agencies and programs shown in Table 13-16, owners and operators of water conveyance systems must implement similar best management practices to reduce sediment and erosion, in order to meet the TMDL requirements." (Proposed TMDL at 107-169) (Emphasis Added).

Second, the Districts' EMP ensures against downstream mercury transport by any sediment dredging projects by managing the surface levels and removing contaminants. The EMP provides a comprehensive evaluation framework governing sampling, sediment and soil testing, and test interpretation (disposal guidelines) and how the dredging work is performed. A pre-stipulated level of chemical concentration is reached for the design new surface (leave surface) before the project begins. The design new surface is tested during the maintenance activity, if the chemical concentrations exceed the predetermined level, the Districts cap the design new surface with 6 inches of clean material. Therefore, the Districts' dredging activity leaves the area with lower chemical concentrations than before the dredging occurred.

In addition, to minimize disturbance, the EMP details BMPs for the maintenance activity. The BMPs implemented include, but are not limited to:

- The Districts maintain compliance with the City of Portland Erosion Control Manual during and after all maintenance projects.
- Clearing and grading will be conducted to prevent exposed inactive areas from becoming a source of erosion.
- Erosion and sediment control measures including perimeter sediment control will be in place before vegetation is disturbed and will remain in place and be maintained, repaired, and promptly implemented following procedures established for the duration of construction, including protection for active storm drain inlets and catch basins and appropriate non-stormwater pollution controls.
- Temporary stabilization will be provided for that portion of the site where construction activities cease for 14 days or more with a covering of blown straw and a tackifier, loose straw, or an adequate covering of compost mulch until work resumes on that portion of the site.
- Permanent erosion control measures will be provided on all exposed areas. Temporary sediment control practices will not be removed until permanent vegetation or other cover of exposed areas is established; however, all temporary erosion control measures will be removed as exposed areas become stabilized, unless doing so conflicts with local requirements. Construction materials and waste, including sediment retained by temporary BMPs will be properly disposed.

In March 2019, DEQ performed an audit of in-water work performed under the 401 WQC. The audit concluded that there were no violations and that we met the stipulations of the certification.

Given that the Districts have an EMP for any future in-water sediment removal projects and that already identify mitigation against erosion control and sediment transport, the Districts should be removed from the regulation of the Proposed TMDL.

CONCLUSION

For the reasons discussed in this letter, the Districts request that DEQ remove Water Conveyance Systems from the Responsible Persons, nonpoint sources designation, or in the alternative find that the Districts' operations are outside of the Proposed TMDL regulation. In addition, the Districts requests an in-person meeting with DEQ to explain our unique system and how we operate it.

Sincerely,

Sunny Simpkins, R.G.
Deputy Executive Director of Policy, Planning, and Finance Multnomah County
Drainage District #1

**74. Holly
Bellringer,
U.S. Army
Corps of
Engineers
Portland
District,
Water
Quality
Section**

The U.S. Army Corps of Engineers Portland District (Corps) appreciates the opportunity to comment on the State of Oregon's Department of Environmental Quality's (DEQ) Revised Willamette Basin Mercury TMDL Draft for Public Comment (draft TMDL) dated July 3, 2019. The Corps appreciates DEQ's efforts and supports the overall goal of reducing mercury and improving water quality in this important watershed. However, we have several concerns with the requirements in the TMDL for nonpoint sources and seek clarification and specificity of each of those requirements, as well as, the legal authority for requiring each action proposed. Without further clarification of the various authorities cited and how those relate to proposed requirements for nonpoint sources, the Corps is unable to meaningfully comment on the proposed requirements and how they would impact its congressionally authorized missions. Additionally, the Corps believes there may be an error on page 51 of the draft TMDL. The sentence below Table 9-2, appears to refer to North Santiam River as a tributary to Green Peter Reservoir instead of Detroit Reservoir.

Respectfully,

Holly Bellringer
Biologist
U.S. Army Corps of Engineers
Portland District, Water Quality Section

September 6, 2019

**75. Sharla
Moffett ,
Oregon
Business &
Industry,
Oregon**

Andrea Matzke Basin Coordinator
Oregon Department of Environmental Quality 700 NE Multnomah Street, Suite
600
Portland, Oregon 97232

Via email: WillametteMercuryTMDL@deq.state.or.us

Re: Revised Draft Willamette Basin Mercury Total Maximum Daily Load

Dear Ms. Matzke:

Thank you for the opportunity to comment on the Department of Environmental Quality's (DEQ) Draft Revised Willamette Basin Mercury Total Maximum Daily Load (TMDL). Oregon Business & Industry (OBI) is Oregon's most comprehensive business association representing approximately 1,600 businesses that employ nearly 330,000 people. Our members are from a variety of sectors including industrial, manufacturing and land use, so we represent both point and nonpoint dischargers. A large number of our members will be affected by the Willamette Basin Mercury TMDL.

OBI's members have demonstrated significant commitment to maintaining and enhancing the health of Oregon's water resources. Every day, our member businesses engage in actions that promote water quality for the benefit all Oregonians.

OBI recognizes the significant work and staff hours that have gone into preparing the TMDL as well as DEQ's mission to protect water quality in Oregon. We remain concerned, however, that implementation of this TMDL will require businesses to dedicate valuable time, money and attention attempting to address a problem that is largely beyond their control. DEQ acknowledges that the accumulation of mercury in the Willamette Basin originates from historical anthropogenic emissions deposited onto our landscape or background sources that are beyond the regulated community's control. Further, DEQ states that even the complete elimination of the estimated 4% of mercury contributed to the Willamette River and its tributaries from wastewater and municipal stormwater is unlikely to result in a measurable reduction of mercury. These factors make implementation of this TMDL quite different from those previously issued for other pollutants and other waterbodies.

In this TMDL, DEQ assigned wasteload allocations of 10% for wastewater dischargers and 75% for stormwater dischargers, and a load allocation of 88% for nonpoint sources. It is difficult to fathom how these sources will achieve these massive reductions. Existing regulations already require point sources to implement practices that limit mercury transport into waterways, typically by reducing total suspended solids (TSS). Similarly, nonpoint sources also have already been implementing many, if not all, of the best practices described including protecting riparian buffers, maintaining roads and culverts,

stabilizing and re-vegetating streambanks, protecting wetlands, crop rotation and grazing management.

We appreciate the inclusion of the adaptive management provisions. We expect these provisions to allow for flexibility as the TMDL is implemented and as future monitoring and research yield better data sets. An adaptive management approach is especially prudent given the size and complexity of the TMDL, and the lack of certainty with respect to data and modeling outputs.

OBI has significant reservations with the underlying technical analysis and the layering of conservative assumptions made by DEQ. The Oregon Farm Bureau, Oregon Forest & Industries Council and Oregon Association of Nurseries have carried out considerable analyses of the modeling in the Technical Support Document, and we refer you to their robust technical comments for more detailed information. We would, however, like to highlight a few of these modeling concerns:

- No sensitivity analyses were carried out. This could produce a variance in the Food Web Model's (FWM) biomagnification factor resulting in unnecessarily stringent load and wasteload allocations.
- The modeled fish tissue mercury concentrations do not appear to fully support the FWM
I calibration for the Northern Pikeminnow making target concentrations of Total Mercury (THg) questionable.
- The THg concentration required by DEQ appears to lack certainty, as alternative approaches could be employed for determining input parameters and result in a different target THg concentration.
- The Mercury Translator Model introduces further uncertainty as its methodology determined a target concentration of THg in the water column from the dissolved methylmercury input parameter.
- The Mass Balance Model (MBM) employs an additional three models to provide input values and data comparisons for calculating present-day mercury contributions. Using modeling outputs as subsequent model inputs further compounds the magnitude of unreliability in the estimates.

Beyond concerns with the modeling, we find the way in which DEQ has incorporated a margin of safety into the TMDL problematic. The margin of safety, as required by OAR 340-042-0040, is intended to account for uncertainty in the data, as well as uncertainties with estimating pollutant loads, modeling water quality, and monitoring water quality. DEQ employs three distinct elements in its calculation for a margin of safety:

- The use of the Northern Pikeminnow as an efficient bioaccumulator of mercury;
- The method of calculating the Food Web Model which results in a lower value than the average concentration; and
- The use of total mercury concentrations in fish tissue rather than methylmercury in the water quality criterion.

By layering so many conservative assumptions, DEQ has far exceeded regulatory expectations for ensuring a reasonable margin of safety . While we understand DEQ's interest in ensuring a cautious approach in the face of imperfect knowledge, we believe it is possible that the load and wasteload allocations are far more stringent than necessary and that this highly conservative approach has resulted in a significant compliance burden for regulated entities . DEQ should more fully explain the rationale behind their approach and assess the likely impact that each element would have, as well as the cumulative impacts.

Given the cost and complexity associated with direct monitoring of methylmercury levels in fish tissue, OBI acknowledges the practicality of employing a surrogate. While using TSS as a surrogate for assessing and monitoring THg may be effective, we question whether TSS is the best and most accurate surrogate that could be utilized when other surrogate options exist. We request that DEQ explain the selection of TSS as the preferred surrogate for THg.

Finally, we have noted that DEQ is entrusting significant authority to a great variety of Designated Management Agencies (DMA), which will assume the bulk of the responsibility for preparing implementation plans for the TMDL and Water Quality Management Plan (WQMP). While we believe this strategy could be beneficial in arriving at sector-specific plans addressing unique factors and challenges associated with each sector, we are concerned about uneven implementation. With so many DMAs involved, we fear that some implementation plans might impose more burdensome requirements than others. Because the upside outweighs the potential pitfalls, we do not suggest that this provision be modified. However, we would like DEQ to remain cognizant of the risk as the DMAs develop TMDL implementation plans.

In light of the concerns outlined above, OBI urges DEQ to devote the time and effort necessary to resolving the shortfalls and uncertainty in the modeling and its conservative assumptions.

Without addressing the numerous issues in the TMDL's technical support, DEQ may be placing an unnecessarily heavy compliance burden on regulated entities. Absent sound technical underpinnings, it is possible the TMDL could mandate excessive control provisions and still not achieve its goals.

Thank you, again, for the opportunity to comment on the Revised Draft Willamette Basin Mercury TMDL. We look forward to working with DEQ as the TMDL is finalized. Please contact me should you have any questions about OBI's comments.

Director
Energy, Environment, Natural Resources and Infrastructure

**76. Mike Rolfe,
Creswell
Water
Control
District,
Oregon**

Creswell Water Control District
Mike Rolfe - Chairman

Good afternoon -

I'm writing you on behalf of our district to explain our operation and responsibility to our neighbors. We believe as a district that the way our water ways are set up, based on function and shared responsibility, the TMDL / WQMP doesn't apply to our district .

We are comprised of two different seasonal water ways.

Water way #1:

We, as a district, own roughly a half mile long strip of land coming out of Lynx Hollow from the west and runs east to the coast fork of the Willamette River. Built back in the 1950's , roughly half the length of the channel is concrete on both the walls and the bottom surface and the other half , on the West side of the highway is a well vegetated man made canal.

Water way #2:

This portion starts on the west side of Hwy 99 running North and South, It is connected to Water way #1 by a steel diversion gate, in the vegetated portion, and collects rain water, in the form of runoff, from privately owned acres of hills and flat land to the west. It runs through 200 plus privately owned parcels and finds its way to the coast fork of the Willamette River on the northern edge of the Emerald Valley Resort and Golf Course just outside of Creswell. We as a district help people help themselves to maintain it and keep the seasonal water flowing as free as possible to the river. In addition, we help them understand the importance of this ditch to help prevent flooding during heavy rains.

I hope you find this helpful in understanding how our system works . We will be glad to go over it in further detail .

Thank you for your time -

Mike Rolfe

September 6, 2019

**77. April Snell,
Oregon
Water
Resources
Congress
(OWRC) &
Oregon
Farm
Bureau
(OFB)**

Andrea Matzke, Basin Coordinator
Oregon Department of Environmental Quality 700 NE Multnomah Street, Suite
600
Portland, OR 97232

Submitted via email to: WillametteMercuryTMDL@deq.state.or.us

Dear Ms. Matzke,

On behalf of the Oregon Water Resources Congress (OWRC) and the Oregon Farm Bureau (OFB) we are submitting the following comments on the proposed Willamette Basin Mercury Total Maximum Daily Load (TMDL) and associated Water Quality Management Plan (WQMP) issued by the Oregon Department of Environmental Quality (DEQ) on July 3, 2019. While our organizations have other concerns about the feasibility of implementing and attaining the new mercury TMDL allocation, these joint comments are primarily focused on DEQ's proposal to list "water conveyance entities" (irrigation districts, water control districts, water improvement districts, and drainage districts) in the Willamette Basin as "Responsible Persons" (RPs) for implementing this TMDL. We are concerned the lack of clarity and potential negative impacts related to the role of irrigation districts and similar entities in implementing water quality standards will lead to increased conflict and costly litigation rather than collaborative partnerships necessary to achieve measurable water quality improvements.

Oregon Farm Bureau Federation (OFB) is a voluntary, grassroots, nonprofit organization representing Oregon's farmers and ranchers in the public and policymaking arenas. As Oregon's largest general farm organization, its primary goal is to promote educational improvement, economic opportunity, and social advancement for its members and the farming, ranching, and natural resources industry. Today, OFB represents over 7,000-member farm families professionally engaged in the industry. Over 3,000 of those members are located within the Willamette Valley.

Oregon Water Resources Congress (OWRC) is a nonprofit statewide association representing irrigation districts, water control districts, improvement districts, drainage districts, and other local government entities delivering agricultural water supplies.

These water stewards operate complex water management systems, including water supply reservoirs, canals, pipelines, and hydropower production, and deliver water to roughly one-third of all irrigated land in Oregon.

OWRC represents some, but not all, of the irrigation districts, water control districts, water improvement districts, drainage districts, and other similar entities listed as "water conveyance entities" in the proposed TMDL. Many of OFB's members are members or operators of the aforementioned irrigation and drainage districts. We are supportive of achievable and implementable water quality standards in the Willamette Basin and throughout Oregon, and recognize that

DEQ is under stringent, court-ordered deadlines for implementing TMDLs. However, the inclusion of our members as RPs is highly problematic as this new term lacks statutory authority and clarity as to what districts would be responsible for, which unnecessarily and inappropriately places liability on districts and increases the risk of litigation. The lack of clarity also reduces the likelihood that TMDL load allocations will ever be attained.

Key Concerns

The proposed Willamette Basin Mercury TMDL and associated WQMP utilizes the term “Responsible Persons” (RPs), which appears to be a new term that is undefined under either Oregon statute or rule, with uncertain meaning and tremendous potential for legal liability. While DEQ has stated RPs are not Designated Management Agencies (DMAs), the draft TMDL lists water conveyance entities as a “DMA category” (see Appendix E), thereby creating additional uncertainty over what this term means and what implications it has for districts. We agree irrigation districts are not DMAs, which are defined in OAR 340-042-0030(2) as entities “that [have] legal authority of a sector or source contributing pollutants.” However, it is unclear what the legal distinction and potential liabilities are in implementing TMDLs as an RP versus a DMA.

The inclusion of irrigation districts, drainage districts, and similar agricultural water suppliers as generic “water conveyance entities” also fails to acknowledge the separate and distinct statutory authorities and responsibilities of each type of entity. There are significant differences in not only the authorities, but the specific purposes for which different districts were formed under ORS chapters 545, 547, 552, 553, and 554. For example, irrigation districts are formed most commonly by a group of farmers for the purpose of delivering water to farms and other agricultural water users. Drainage districts are similarly formed by a group of farmers for the purposes of delivering water away from farms. In either circumstance, our members manage the conveyance of water and have limited or no control over the quality of the water they receive or deliver. While we do not represent all of the entities listed, we are not aware of any information that justifies any of the forty-seven entities being listed as RPs without further clarification.

Irrigation districts, drainage districts, and similar entities generally lack statutory authority to manage the quality of the water they deliver. They are responsible for performing certain water management functions for their assessed district patrons, most commonly operations and maintenance of water delivery infrastructure. These entities are responsible for managing and conveying a quantity of water and are generally not responsible for, nor do they have the statutory authority, to manage the quality of the water they deliver. Districts lack both the authority and resources to implement water quality measures for mercury or other pollutants. There are currently no methods, resources, or authority for districts to reduce mercury in water. Furthermore, there is no evidence that district activities directly contribute to mercury loads and therefore are unlikely to have any impact on the amount of mercury in the Willamette Basin.

Not only do irrigation districts, drainage districts, and similar entities lack authority to manage water quality, they also lack statutory authority to compel compliance by member patrons and are not responsible for the land management

activities of individual water users within districts. In the Willamette Basin and throughout Oregon, districts regularly engage with their local Soil and Water Conservation Districts (SWCDs). They provide their water users with information and resources available from local SWCDs as well as the Natural Resources Conservation Services (NRCS).

However, districts are generally not legally authorized, nor possess the financial means, to implement or enforce water quality improvement measures upon the individual farmers within their districts, and not all of them have the requisite knowledge and experience to convey information about these programs to their patrons.

It is appropriate for the Oregon Department of Agriculture (ODA) to be listed as a DMA and to continue implementing the Agricultural Water Quality Management Program (under SB 1010) within districts. ODA's program ensures there is clarity for individual farmers and ranchers on what requirements need to be followed and what steps can be taken to achieve compliance. Under ORS 568.930, landowners within boundaries of water quality management area plans are already required to comply with plan rules, regardless of whether they are receiving water from an irrigation district or similar entity and are subject to penalties if they do not comply. ODA has educational tools and technical assistance to provide landowners and operators to help resolve water quality issues. ODA also has the authority to take enforcement action against landowners and operators who do not voluntarily comply with water quality standards, implementation plans, and related area rules.

In addition to the lack of clarity and authority, irrigation districts and similar entities do not have resources to implement the proposed TMDL and related WQMP. Many of the proposed RPs are small districts with little or no paid staff. These small entities lack the financial resources and management structure to implement the proposed WQMP, increasing the likelihood of non-compliance. Even entities with staff struggle with understanding what role their particular district has in addressing mercury TMDL allocations. Our organizations remain committed to conducting outreach and education to our respective members, but we are extremely concerned about the potential unfunded regulatory burden being placed on these entities.

In the proposed TMDL, DEQ acknowledges the lack of information about water conveyance entities' impacts regarding mercury and would appear to be requesting more information about operations so that it can further regulate entities that may not have any control over the amount of mercury entering or returning to waterways in the Willamette Basin. While DEQ staff have asked districts to provide detailed descriptions of their water conveyance systems under the auspices that it would lead to being excluded as an RP, such information is unlikely to be provided due to potential liabilities and safety concerns associated with such descriptions being accessible online.

Coupled with the lack of clarity over what the role of an RP is in the first instance, we are concerned that information provided in good faith will be used create more onerous and unattainable allocation reduction burdens for individual districts, in addition to only fueling more litigation.

This is particularly true given that all the messaging from DEQ to districts appears to ask for information for the purposes of excluding districts as an RP, while the draft TMDL itself contains onerous requirements that districts are expected to meet, including development of implementation strategies, objectives, timelines, and reporting requirements. Examples of the strategies include best management practices for maintenance activities, maintenance of upland infrastructure (most of which is outside a given district's control) to prevent soil erosion, flow and drainage management, mapping, monitoring, and reporting. These strategies are far from "information gathering" and DEQ should have been more transparent with districts about the potential obligations DEQ proposes to require of them during outreach and engagement with the districts.

While the focus of our joint comments is related to the inclusion of irrigation districts and similar entities as RPs, we do also have broader concerns regarding the proposed mercury TMDL and related WQMP. Our organizations concur with the technical joint comments made by the Oregon Farm Bureau, Oregon Forest Industries Council, and Oregon Association of Nurseries regarding the inadequacies of the modeling used in the load allocations impacting our members. Specific to those impacts, it is worth noting that while DEQ states water conveyance entities "are responsible only for sedimentation resulting from conveyance systems, not from upland agricultural activities," it is unclear how this separation will be made since there is no data allocating mercury to alleged water conveyance activities versus upland agricultural activities. We are concerned this approach may lead to conflict between the named entities, stymieing the types of collaborative partnerships and projects needed to make real progress in improving Oregon's water quality.

In summation, OWRC and OFB appreciate DEQ's ongoing efforts to protect Oregon's water quality, but we have significant concerns about the proposed implementation approach. Placing additional unclear and unfunded mandates upon irrigation districts and similar entities will only lead to additional conflict and litigation rather than improved conditions. We continue to be supportive of irrigation districts and similar entities actively participating in collaborative, basin-wide efforts through local SWCDs and working with appropriate DMAs like ODA. While a long-term solution is needed, at the very least, we urge you to clarify that irrigation districts and similar entities are not responsible for developing or implementing water quality management plans related to activities not within their scope of operations, control, or legal management authority. Your time and consideration of our comments is greatly appreciated.

Sincerely,

April Snell Executive Director
Oregon Water Resources Congress

Dave Dillon Executive Director Oregon Farm Bureau

September 6, 2019

**78. Kathryn
VanNatta,
Northwest
Pulp and
Paper
Association,
Oregon**

VIA EMAIL: WillametteMercuryTMDL@deq.stste.or.us

Andrea Matzke
TMDL Basin Coordinator
Oregon Department of Environmental Quality 700 NE Multnomah Street, Suite
600 Portland, OR 97232-4100

RE: NWPPA Comments on the Department of Environmental Quality's
Revised Willamette Basin Mercury TMDL, Draft for Public Comment, July 3,
2019

Dear Ms. Matzke,

Thank you for the opportunity for the Northwest Pulp & Paper Association (NWPPA) to provide formal comment on the Department of Environmental Quality's (DEQ) Willamette Basin Mercury Total Maximum Daily Load (TMDL) and Water Quality Management Plan and for allowing NWPPA to be a member of the Department's Mercury TMDL Advisory Committee.

NWPPA represents five Oregon mills and hundreds of employees in the Willamette Basin

The Northwest Pulp and Paper Association (NWPPA) is a 63-year old regional trade association representing 12 member companies and 16 pulp and paper mills and various forest product manufacturing facilities in Oregon, Washington and Idaho.

NWPPA members hold wastewater and stormwater permits issued by DEQ in the Willamette Basin and will be subject the proposed TMDL regulatory program to reduce mercury and improve Basin water quality in compliance with the Clean Water Act.

NWPPA participated in the development of the prior mercury TMDL and provided comments at that time. We commend the Department on the additional mercury monitoring data and the expanded analysis used to develop the proposed 2019 Willamette Mercury TMDL.

Overarching NWPPA Comments

Comment 1

In the prior 2006 Mercury TMDL, NWPPA supported a "phased approach" with adaptive management by the Department. NWPPA believes the phased approach and additional mercury monitoring has resulted in a much larger data set and an improved scientific foundation for this revised TMDL.

Comment 2

NWPPA supports the TMDL's scientific foundation that in-stream mercury pollution comes from a variety of sources with a majority of the mercury load

contributions from air deposition sources outside the Willamette Basin and that the science of mercury methylation is still evolving.

Comment 3

NWPPA supports the TMDL's pollution prevention and minimization approach, similar to other mercury TMDLs across the nation, to comply with Oregon's exceptionally stringent methylmercury fish tissue water quality criterion of 0.040 mg/kg (wet weight).

Discussion

NWPPA believes both point and non-point source contributors should be regulated via the TMDL and Water Quality Management plan through pollution prevention and minimization best management practices, to the extent practicable, by the Department or designated management agency.

Comment 4

NWPPA believes that the TMDL's conservative policy decisions and modeling assumptions, combined with an aggressive approach to pollutant prevention and minimization result in a TMDL that is very highly protective of the most sensitive beneficial use of fish consumption in addition to being highly protective of all other designated beneficial uses of waters in the Willamette Basin.

Specific NWPPA Comments Comment 5

NWPPA supports the aggregate 10 percent reduction total mercury target for National Pollution Discharge Elimination System (NPDES) permits with the proposed narrative waste load allocation approach for point source total mercury reductions to the extent practicable under DEQ's wastewater permit program

Discussion

NWPPA believes the 10 percent aggregate reduction of total mercury per day for all point source water permit holders is appropriate given that: 1) industrial point sources in the Willamette Basin provide 0.3 percent of the total load for mercury to the Willamette; 2) all permitted point source dischargers (NPDES and stormwater) comprise approximately 4 percent of the total mercury load; 3) the applicable water quality criterion is a methylmercury fish tissue criterion; and, 4) scientific knowledge of the Willamette Basin methylation processes are still evolving.

NWPPA strongly supports the Department's conclusion in the TMDL Draft for Public Comment, dated July 3, 2019, on page 66, As discussed in the TMDL Technical Support Document, deposition of mercury onto the Oregon landscape is the dominant source of mercury reaching Willamette Basin streams. While these deposited air emissions originate as a mix of global, national, regional and local sources, the largest portion is derived from historical deposition of global anthropogenic mercury emissions (TetraTech, 2019) , or background sources outside of DEQ's control, per Oregon's definition in OAR 340-042-0030 . Further, mercury loads from all permitted (wastewater and stormwater) point source discharges combined are conservatively estimated to be approximately four percent of the total load to Willamette Basin streams. As was found in the 2006 TMDL analysis, even total elimination of this estimated 1.1 percent wastewater and the 3 percent estimated municipal stormwater contributions would not result in measurable response in terms of lowered mercury in the streams, due to the far greater proportion of contributions from atmospheric deposition and

nonpoint source delivery to streams, as well as the decades long lag time for measureable in-stream response. However, DEQ recognizes that, as an environmentally persistent bioaccumulative toxic substance, mercury should be eliminated from discharges to the extent practicable. Therefore, based on the Clean Water Act's allowance for aggregate or individual allocations (40 CFR 130.2(i)); EPA's Guidance for implementing the January 2001 Methylmercury WQ Criterion (2010) and EPA's Memo on Elements of Mercury TMDLs Where Mercury Loadings are Predominantly from Air Deposition (2008); precedents of EPA approved mercury TMDLs of 21 other states (dated 2001 - 2018); and as indicated by a rigorous scientific evaluation, DEQ is assigning aggregate waste load allocations for municipal and industrial wastewater and municipal stormwater point source discharges. The waste load allocations that follow meet the intent of individual allocations by requiring site - specific permit requirements and monitoring with enforceable conditions, such that individual site reductions will be completed and will cumulatively add up to the aggregate percent reduction requirements by sector set by the TMDL.

Comment 6

NWPPA has concerns with the TMDL's conservative approach in the application of the food web model to determine an overly conservative in-stream water column target of 0.14 ng/L to meet the exceptionally stringent fish tissue criterion of 0.040 mg/kg (wet weight) methylmercury (OAR 340-041-8033, Table 40).

Discussion

The recalibrated and updated Food Web Model yields a highly conservative in-stream target of 0.14ng/L of total mercury because: 1) various non-native species are used in the model; 2) the in-stream target is derived from the most conservative median total mercury target level of the selected fish species—that is, for the Northern Pikeminnow, which is a non-native species known to predate salmon and steelhead smolts; 3) and other conservative policy and modeling assumptions.

Comment 7

NWPPA believes the implicit Margin of Safety is appropriate and the use of the Reserve Capacity for future point source growth/expansion should be allowed without additional regulatory restrictions because the TMDL's conservative policy choices are highly protective of beneficial uses. These highly conservative policy choices, modeling assumptions and mercury transportation assumptions are used throughout the Food Web Model, Mass Balance and Translator models as noted in the TetraTech Technical Support Document.

Discussion

NWPPA is concerned with the compounded conservatism of the policy choices and assumptions used in the models leading to overly conservative outcomes and unduly stringent regulatory approaches. Mercury load reduction efforts should be common sense minimization efforts similar to other TMDLs across the nation, to the extent practicable, given that the majority of mercury loading comes from air deposition.

Comment 8

NWPPA believes the future implementation activities by DEQ and Designated Management Agencies should focus on pollution prevention as regulatory

agencies make policy decisions implementing the TMDL and Water Quality Management Plan.

Suggested Remedy

The Department and Designated Management Agencies should focus on adaptive management and allow best management practices already in place designed to reduce anthropogenic mercury loads. The draft TMDL on page 66 addresses that fact that additional analysis reduced the estimated amount of total mercury contributed by point sources in the 2019 draft TMDL from the prior 2006 TMDL.

Comment 9

NWPPA believes the Department should continue to leverage new scientific findings to objectively consider whether reducing total mercury has a linear effect on reducing methylmercury in fish tissue in Willamette Basin fish species and whether the very low proposed modeled target of 0.14 ng/L of instream total mercury can be met. This information (or lack of information) should also be considered when determining the length of time needed to comply with the water quality criterion.

Suggested Remedy

The Department's assumptions for mercury reductions must be fact checked during TMDL implementation by analyzing methylmercury in fish tissue. Measuring methyl mercury in fish tissue is the correct evaluation factor for complying with the water quality criteria under the Clean Water Act. Without a significant breakthrough in the mechanistic understanding of the factors controlling methylation in the ambient environment there is no remedy to the relationship dilemma between total and methyl mercury. Significant scientific questions remain, including what is the spatial distribution of methylation and does methylation follow temporal (e.g., seasonal) patterns? As the science of mercury methylation processes and mercury transport expands, the Department should use adaptive management for monitoring and adjust the TMDLs best management practices for pollution minimization accordingly.

Comment 10

The Department uses literature values for some point source and non-point source mercury loading values.

Suggested Remedy

As future monitoring yields additional mercury loading data, the Department must use adaptive management and adjust accordingly the TMDLs best management practices for pollution minimization.

Comment 11

NWPPA objects the use of Total Suspended Solids (TSS) as a surrogate for measuring mercury and the possible unintended consequences of using TSS as a surrogate for mercury transportation over land into water. NWPPA questions the level of current scientific knowledge regarding: 1) TSS transport contributing to in-stream concentrations of total mercury; 2) the relationship of TSS to methylation processes; and 3) whether a linear cause-and effect relationship exists between TSS and methyl mercury concentrations in Willamette Basin fish tissue.

Discussion

NWPPA has concerns with the reliance on TSS as a surrogate for measuring compliance with methyl mercury reductions in fish tissue. NWPPA questions the scientific relationship between TSS as a surrogate for total mercury transport from land into the Willamette river system.

NWPPA believes the scientific relationship is unproven between TSS transport contributing to total mercury loading in the Willamette Basin and the assumption is also unproven that reductions of TSS will result in attainment in the near future of the methylmercury fish tissue water quality criterion. DEQ has already reduced Total Suspended Solid (TSS) benchmarks in 1200-Z Industrial Stormwater Permits in the 2017-2018 permit revision. While we agree TSS reduction is a regulatory tool to reduce soil transport into a river system, the relationship and timing between TSS load reductions resulting in reductions to methylmercury reductions in fish tissue remains unproven.

Suggested Remedy

NWPPA asks for a written response regarding the Department's plans for future scientific study and baseline validation of TSS as it relates to total mercury transport into river systems and the scientific relationship of TSS reductions contributing to attainment of the 0.040 mg/kg (wet weight) methylmercury water quality criterion.

Comment 12

NWPPA asks that facilities with 1200-Z Industrial Stormwater permits be able to prove compliance with the TMDL's proposed TSS surrogate for methylmercury in fish tissue by alternative compliance methods until the relationship between TSS and mercury has been scientifically evaluated.

Suggested Remedy

As noted in Comment 11, NWPPA is concerned and questions the level of scientific knowledge of TSS loading contributing to exceedances of methylmercury fish tissue criterion and asks for further scientific study to establish a surrogate relationship between TSS loading and methylmercury in Willamette Basin fish tissue.

Conclusion

Thank you for the opportunity to provide comment on the Revised Willamette Basin Mercury TMDL, Draft for Public Comment and for allowing NWPPA to be a member of the Department's Mercury TMDL Advisory Committee. I can be contacted to answer any questions at 503-844- 9540.

Sincerely,

Director of Regulatory and Government Affairs Northwest Pulp and Paper Association

**79. Brent
Stevenson,
Santiam
Water
Control
District,
Oregon**

Santiam Water Control District
284 E. Water St. t Stayton OR, 97383 Phone (503) 769-2669 t Fax (503) 769-5995

September 6, 2019

Sent Via Email

Andrea Matzke, Basin Coordinator
State of Oregon, Department of Environmental Quality 700 NE Multnomah
Street, Suite 600
Portland, OR 97232 WillametteMercuryTMDL@deq.state.or.us

RE: Submission of Public Comment on the Revised Willamette Basin
Mercury TMDL, Draft for Public Comment, July 3, 2019

Basin Coordinator:

The Santiam Water Control District respectfully submits the attached public comments to the Revised Willamette Basin Mercury TMDL, Draft for Public Comment, dated July 3, 2019 (“TMDL”). The Santiam Water Control District submits its public comments via email prior to the expiration date of September 6, 2019 at 5:00 p.m. PST.

Thank you for your time and consideration.

Sincerely,

SANTIAM WATER CONTROL DISTRICT

Brent Stevenson District Manager

I. Background.

On July 3, 2019, the State of Oregon, Department of Environmental Quality (“DEQ”) released the Revised Willamette Basin Mercury TMDL, Draft for Public Comment (“Draft TMDL”). The Draft TMDL includes the draft Water Quality Management Plan.

The Santiam Water Control District (“SWCD”) is an Oregon water control district operating under the power and authority granted to water control districts by Oregon Revised Statutes, Chapter 553 (“Statutory Authority”). SWCD is controlled by a board of directors comprised of local farmers. SWCD provides irrigation water to agricultural patrons in the Willamette Basin along the North Santiam River. SWCD holds water rights to irrigate over 17,000 acres.

The SWCD water conveyance facilities (“SWCD Facilities”) run approximately 118 miles and consist primarily of open canals located on rights-of-way across the

agricultural lands of district members. SWCD does not own or control land that discharges into the SWCD Facilities. SWCD does not hold legal control over water quality discharges into SWCD Facilities.

II. SWCD Participation in Public Process.

SWCD understands that development of a TMDL is a complex process and appreciates the work DEQ has invested in preparing the Draft TMDL. Brent Stevenson, SWCD District Manager, is a member of the TMDL Advisory Committee. SWCD has committed resources to meaningful participation in the DEQ administrative process surrounding the Draft TMDL. During this public process, SWCD and other agricultural water districts have consistently expressed concern over the Draft TMDL “responsible person” designation.

III. SWCD Interest in the Draft TMDL.

The Draft TMDL designates SWCD as a “responsible person” obligated to implement management strategies and develop sector-specific implementation plans. SWCD has several concerns with this designation. First, SWCD and many other water conveyance entities (“WCEs”) do not perform activities that contribute mercury to waterbodies. Instead, WCEs merely transport water. SWCD is limited by its Statutory Authority, which does not grant SWCD regulatory authority over the water quality of third-party discharges into SWCD Facilities. Other agencies and other jurisdictions control and regulate water quality entering SWCD Facilities.

Therefore, SWCD cannot perform the obligation to implement the management strategies required by the Draft TMDL. The unspecific and undefined “responsible person” designation imposes a compliance obligation without extending the corresponding control over the factors necessary to achieve compliance. Therefore, the legal disconnect of the Draft TMDL codifies environmental decline by agency order while exposing “responsible persons” to unbound legal risk and potentially infinite administrative burden. The Draft TMDL proposes a legal mechanism that would assure mercury water quality standards are not attained because the regulated entities upon which it relies cannot perform the proposed obligations. Because of this threatened harm to SWCD operations and SWCD members, SWCD has an immediate and important interest in the Draft TMDL.

SWCD understands that DEQ considers this comment period to be the sole opportunity for parties designated as a “responsible person” by the Draft TMDL to present evidence of why they should not be so designated. Accordingly, SWCD respectfully submits the following comments to the Draft TMDL.

IV. SWCD Comments to the Draft TMDL.

A. The Draft TMDL does not clearly distinguish a “responsible person” from a DMA.

The Draft TMDL fails to clearly distinguish “responsible person” obligations from DMA obligations. The Draft TMDL states that a “responsible person” is “an entity identified in a TMDL that has responsibility to meet assigned allocations

and/or surrogate measures. DMAs and “responsible persons” are responsible for implementing management strategies and developing and revising sector-specific or source-specific implementation plans, unless otherwise indicated in the WQMP.”¹ DEQ’s administrative rules do not differentiate between a “responsible person” and a DMA. The rules do not define the term “responsible person.” The rules define a DMA in OAR 340-042-0030(2) as “a federal, state or local governmental agency that has legal authority over a sector or source contributing pollutants, and is identified as such by the Department of Environmental Quality in a TMDL”. SWCD holds no such legal authority.

Obliquely, the Draft TMDL distinguishes WCEs (as a sub-group of “responsible persons”) from DMAs by acknowledging that unlike DMAs, WCEs do not have the regulatory authority to assert legal controls over mercury in their facilities.² This leads to the conclusion that “responsible persons” are entities without regulatory authority which are nonetheless required to meet the requirements placed on DMAs (DMAs which, unlike SWCD, have actual regulatory authority over a sector of activity.)

The Draft TMDL fails to clearly define the role of SWCD. SWCD is named once in the Draft TMDL - Appendix E, under the heading “DMA Name.” Appendix E also categorizes SWCD as a “water conveyance” type of “DMA Category.” The Draft TMDL notes that “Appendix E . . . lists the WCEs that DEQ has identified as responsible persons.”³ Communications from DEQ indicate that the agency intends to designate SWCD, along with the other “water conveyance” entities, not as a Designated Management Agency (“DMA”), but as a “responsible person.” The Draft TMDL must clearly define SWCD’s role in order for SWCD to be able to comply. A failure to provide such definition exposes SWCD to potentially open-ended and arbitrary DEQ enforcement and penalties. This would render the requirements void for vagueness.

1 Draft TMDL, page 77

2 Draft TMDL, page 77-78

3 Draft TMDL, Page 108

B. SWCD does not have regulatory authority over the water quality of discharges into SWCD Facilities.

The Draft TMDL appears to require SWCD to control mercury within SWCD Facilities as if SWCD had the statutory authority and the regulatory control held by a DMA. SWCD holds no such legal control. Water control districts, such as SWCD, have the authority granted by the Oregon Legislature, specifically ORS Chapter 553. ORS Chapter 553 does not grant SWCD the authority to regulate agricultural return flow water quality or the water quality of other parties discharging into SWCD Facilities. The Draft TMDL acknowledges that WCEs do not have the regulatory authority to assert legal control over mercury levels in their facilities, yet the Draft TMDL still assigns a regulatory obligation and the corresponding legal exposure to those entities; the same requirements the Draft TMDL would impose upon DMAs holding actual legal control.⁴

DEQ claims WCEs have “direct control over land or water management activities affecting mercury loading to rivers and streams.” Accordingly, DEQ expects WCEs to “[m]anage upland conveyance system infrastructure, for example, roads, pumps, etc. to prevent soil erosion, and sediment delivery to waterbodies.”⁵ SWCD does not have control over the uplands from which return flows and stormwater originate. SWCD does not have control over the private landowner conveyances that discharge into SWCD Facilities. SWCD does not have control over private and municipal roads that create run-off discharged into SWCD Facilities.

C. DEQ’s designation of water conveyance entities as “responsible persons” in the Draft TMDL is overbroad, has no legal basis, and improperly shifts a regulatory burden from DEQ.

DEQ lists all WCEs in the Willamette Basin as “responsible persons” in the Draft TMDL without basing the designation on any WCE-shared mercury producing activity. DEQ also fails to identify WCEs by type (irrigation, water control, etc.) by primary purposes, or by actual entity activities. DEQ appears to have listed every entity that potentially falls within the undefined “water conveyance entity” term without any developed basis for inclusion.

DEQ does not point to any specific sediment or erosion-initializing activities performed by all the listed WCEs. The only “activity” in which all listed WCEs engage is the transport of water. For example, one listed WCE operates a closed (piped) water conveyance system, another does not hold water rights, and another pumps water from one end of a natural waterbody to the other without changing the composition of the conveyed water.

4 Id.

5 Draft TMDL, page 110

WCEs should not adopt management responsibilities under the TMDL because they are not “sources” of mercury pollution and because they cannot regulate or otherwise control any sector of mercury pollution. DEQ has provided no other basis for which it can impose requirements on WCEs under the TMDL. Under OAR 340-042-0030 a “Source” is defined as “any process, practice, activity or resulting condition that causes or may cause pollution or the introduction of pollutants to a waterbody.” The WCEs identified in the Draft TMDL have no common process, practice, or activity beyond the mere transport of water. The conveyance of water does not create mercury. Instead, the pollutant is discharged by the lands draining into conveyance facilities.

DEQ will rely upon its “Decision Tree” (not included with the Draft TMDL or in the materials for public comment) to determine the planning and reporting requirements of WCEs. But the Decision Tree does not accommodate or consider whether the subject WCE introduces or controls the introduction of mercury into the waterbodies – there is no administrative step where DEQ evaluates whether a WCE performs a sediment or erosion-initializing activity. Rather, the Decision Tree’s threshold question is whether WCE return flows enter waters of the state. Such an evaluation is at once insufficient and unnecessary. It is insufficient to determine whether the WCE has any control over the pollutant level and it is

unnecessary if cases where the WCE operates a closed conveyance environment and in all cases where the facilities are not the source of the pollutant.

Designation of all WCEs as responsible persons, without any basis showing they either contribute, or can control the contribution of, the pollutant which the TMDL regulates, is overbroad and outside the lawful scope of the TMDL. Further, DEQ is improperly shifting its own burden to show an entity is jurisdictional to the WCEs by requiring WCEs to prove out of TMDL regulation rather than DEQ providing evidence that they should be regulated.

D. The Draft TMDL does not distinguish the wasteload allocations for WCEs from upland agricultural activities.

The TMDL is required to identify pollutant sources, estimate the amount of actual pollutant loading from these sources, and establish wasteload and load allocations for these sources. ⁶ The Draft TMDL identifies only one wasteload allocation for “General Nonpoint Source and Background” which includes Forestry, Agriculture, Water Impoundments, Water Conveyance Entities, Non-Permitted Urban Stormwater, and Atmospheric Deposition.⁷ The Draft TMDL does not estimate the amount of pollutant loading from WCEs as a group, or from the WCEs that deliver irrigation water to agriculture (“Irrigation Entities”). The Draft TMDL does not distinguish among types of agricultural sources – specifically, the modeling data does not allocate mercury between the activities of Irrigation Entities and upland agricultural activities. The Draft TMDL modeling data also fails to separate naturally occurring and background sources of mercury from other sources of mercury. Accordingly, Irrigation Entities are grouped with upland agricultural operations and with non-agricultural runoff from urban non-MS4 stormwater.

⁶ OAR 340-042-0040(4)(f)

⁷ Draft TMDL, page 62

The Draft TMDL states that WCEs are only responsible for their activities and not for upland return flows.⁸ However, because the Draft TMDL does not set a load allocation for either upland exempt agricultural activities or for Irrigation Entities’ activities (whatever those may be) there is no mechanism for determining which entities are meeting, or failing to meet, mercury reductions.

Instead, as proposed, compliance will be based on the performance of the mandated management activities by Irrigation Entities, such as the requirement to manage “upland conveyance system infrastructure, for example, roads, pumps, etc. to prevent soil erosion, and sediment delivery to waterbodies.”⁹ As discussed above, SWCD and other Irrigation Entities do not have the regulatory authority to implement this management strategy. The Draft TMDL allocates mercury load so broadly across so many sectors and activities that WCEs could never demonstrate any diminution in mercury loading. Therefore, the Draft TMDL sets up the plan in general, and the WCEs in particular, for failure because the Draft TMDL would impose compliance measures the agency cannot quantify and the WCEs cannot meet.

E. Other agencies and jurisdictions hold regulatory authority over water quality discharged into SWCD Facilities and those entities are the proper parties to implement TMDL management plans.

In contrast to SWCD's lack of regulatory authority over water quality, there are several state agencies with authority to control the entities that discharge into SWCD Facilities and with authority over activities in the SWCD Facilities. For example, Oregon Department of Agriculture ("ODA"), has regulatory control over agricultural activities through the Agricultural Water Quality Management Act. ODA has authority to develop Agricultural Water Quality Management Area Plans based on the load allocation to agricultural sources. The Draft TMDL properly identifies ODA as a DMA with regulatory control over a sector of activities. Oregon Department of State Lands ("DSL") has regulatory control over certain activities within water conveyance systems. The Draft TMDL properly designates DSL as a DMA with regulatory control over a sector of activities. Not only does the Draft TMDL acknowledge that water conveyance entities do not have regulatory power, it acknowledges that their conveyance facilities are in fact regulated by other entities designated as DMAs: "[w]ater conveyance systems, including those that are managed for irrigation and drainage, are currently regulated by multiple state and federal agencies, including Oregon Water Resources Department, DSL, USACE, and DEQ's own 401 water quality certification program."¹⁰

8 Draft TMDL, page 107

9 Draft TMDL, page 110

10 Draft TMDL, page 107

Other entities control the water quality of the non-agricultural stormwater discharged into SWCD Facilities impacting mercury load. Marion County and DEQ issue permits for stormwater discharges into SWCD Facilities without the permission of SWCD. SWCD Facilities also suffer the discharge of unauthorized stormwater from other local jurisdictions. Those entities, parties discharging into SWCD Facilities, are the proper parties for the Draft TMDL to assign responsibility for water quality management activities and the reduction of the mercury load entering SWCD Facilities because those entities are the source of the pollutant or have the land use controls over the source of the pollutant

F. The Draft TMDL management responsibilities are unduly burdensome and duplicative.

SWCD does not have the resources to implement extensive management strategies imposed on responsible persons by the Draft TMDL. SWCD employs a district manager, an office manager, two full time field technicians, and a part-time GIS technician. SWCD finances are limited to the assessments and charges it imposes on its patrons. The Draft TMDL would impose an unfunded mandate on SWCD. For example, SWCD would have to "[c]onduct education and outreach to water users and upland agricultural and urban land owners that discharge to system."¹¹ SWCD does not have the staff to organize and perform regular outreach activities or to prepare educational materials. SWCD would need to hire

staff or a third-party entity to perform the educational obligations already delegated to other state entities.

The Draft TMDL's imposition of these management responsibilities on SWCD duplicates the obligations already placed upon other agencies and jurisdictions with existing programs in place for the same target population. For example, ODA has existing, well-developed outreach programs for agricultural water users. Municipalities, such as Marion County, have water quality programs including stormwater management plans and resident informational programs. These entities have the resources to develop meaningful and effective outreach programs and the expertise with water quality controls particular to their constituents, which are the same landowners and entities discharging mercury into SWCD Facilities. DEQ should not reasonably expect SWCD to develop better programs than DEQ and sister agencies charged with the very responsibility it now seeks to impose upon SWCD. DEQ should not require SWCD to implement burdensome and duplicative actions.

G. In order to resolve the issues raised above, the Draft TMDL should incorporate water conveyance entities delivering irrigation water under ODA's DMA jurisdiction.

ODA is the proper DMA to manage agriculture and Irrigation Entities. Instead of listing Irrigation Entities as stand-alone "responsible persons," the Draft TMDL should require ODA to manage Irrigation Entities activities concurrently with other agricultural activities under its existing Agricultural Water Quality Management Act and its mercury-specific DMA management authority ("ODA Management Plans").

ODA and DEQ have an existing relationship in which ODA implements water quality management plans for agricultural areas. The two agencies work together to complete biennial reviews of ODA's Agricultural Water Quality Management Plans in the Upper, Middle and Lower Willamette Basin areas.¹² Irrigation Entities currently work with their local Soil and Water Conservation Districts to improve water quality through the Oregon Department of Agriculture's Agricultural Water Quality Management Program. Under that program, a Local Advisory Committee ("LAC"), or regional team of stakeholders, meets annually to go over new water quality data, discuss areas that need improvement, and coordinate implementation of these improvements. Irrigation Entities are part of this established and well-developed program. In fact, many local farmers are both LAC members and Irrigation Entity board members. Irrigation Entity staff members are also often members of the LACs. Most of the adopted area plans include specific references to irrigation, ditch cleaning and return flows, because these are all agricultural activities. Inclusion of the Irrigation Entities in the ODA management process supports the argument below that the Irrigation Entities are part of ODA's jurisdiction under the Agricultural Water Quality Management Act. The integration of ODA management, Irrigation Entities, and farmers suggests that the most successful option to pursue water quality success is to incorporate WCEs within the ODA Management Plans.

Effective water quality improvements cannot come from water conveyance activities alone, but from water conveyance activities in coordination with farm and other agricultural activities. For example, Irrigation Entities, with ODA’s regulatory support, can identify areas in their systems adversely impacted by return flows and then coordinate with the contributing agricultural sources to address the problem. Alone, the Irrigation Entities cannot require the actual pollutant source to modify its activities. Therefore, if Irrigation Entities are stand-alone “responsible persons”, as contemplated in the Draft TMDL, they will be ineffective at improving water quality. The Draft TMDL should instead integrate Irrigation Entities under ODA’s Management Plans.

H. The Draft TMDL fails to demonstrate “reasonable assurance” that “responsible persons” have the actual or legal capacity to implement prescribed management plans.

The Draft TMDL’s WQMP must meet the requirement of OAR 340-042-0040(4)(l) to include a “reasonable assurance that management strategies and sector-specific or source-specific implementation plans will be carried out through regulatory or voluntary actions.” OAR 340-042-0030(9) defines the term “Reasonable Assurance” as “a demonstration that a TMDL will be implemented by federal, state or local governments or individuals through regulatory or voluntary actions including management strategies or other controls.” The Draft TMDL fails to meet the reasonable assurance requirement because it relies on the implementation of sector-specific management plans by “responsible persons” lacking regulatory authority to implement those plans. The Draft TMDL cannot provide reasonable assurances because “responsible persons” have no legal authority to perform the contemplated obligations and therefore, the plan will fail to achieve water quality goals.

The Reasonable Assurances section of the Draft TMDL claims that a “high likelihood of implementation is demonstrated. . .” However, the Draft TMDL fails to cite any legal basis by which water conveyance entities may implement several of the required management activities.¹³ Despite the legal vacuum created by the proposal, the Draft TMDL offers no other evidence to support the counter-intuitive “high likelihood” conclusion. Because the “responsible person” has no legal authority to compel the performance required to achieve compliance, there are no reasonable assurances that the sector-specific management strategies and implementation plans dependent on WCEs will be performed. DEQ’s reliance on SWCD and similarly-situated water districts to implement management plans outside of their authority will result in the failure to attain and maintain water quality standards. In the alternative, in order to meet the reasonable assurance requirement, the Draft TMDL should recognize Irrigation Entities under the regulatory umbrella of the ODA Management Plans and align obligations with parties holding the legal authority to perform those obligations.

ORS 568.912(2) grants ODA control over “landowners” (defined to include an operator, such as SWCD) “located within an area subject to a water quality management plan to perform those actions on the landowner’s land necessary to prevent and control water pollution from agricultural activities and soil erosion.” The term “Agricultural Activities” may include (but are not limited to) “Construction or maintenance of any works or facilities Agricultural and

cropping practices; or Any other measure or avoidance necessary for the prevention or control of water pollution of the waters of the state.”¹⁴ SWCD performs maintenance of irrigation facilities on the SWCD Facilities running through and serving agricultural lands.

Therefore, the maintenance of irrigation facilities is an agricultural activity. While ODA has expressed concern that this language does not encompass Irrigation Entities, and while ODA presently appears inclined to shift administrative responsibility, the legislature may readily clarify the Agricultural Water Quality Management Act to expressly address ODA authority over Irrigation Entities.

If DEQ does not incorporate water conveyance entities into the ODA Management Plans, the agency must address the Draft TMDL deficiencies in some other way. If the Draft TMDL requires water conveyance entities to regulate mercury within their facilities, the legislature must grant the water conveyance entities regulatory authority to do so (e.g., authority over activities on private property discharging water (of any type) into SWCD Facilities). Alternatively, if the Draft TMDL intends water conveyance entities to be responsible only for managing their own activities, the agency must develop a data system that differentiates between upland agricultural activities and water conveyance maintenance activities for the purpose of clarifying that a “responsible person” is not responsible for the impacts of discharges made by other parties over whom the “responsible person” exercises no legal control.

13 Draft TMDL, page 131 14 ORS 568.912(2)

V. Conclusion.

SWCD appreciates the opportunity to comment on the Draft TMDL and to explain why DEQ should remove SWCD and other WCEs from the list of “responsible persons” in the Draft TMDL.

September 6, 2019

80. Travis Williams, Willamette Riverkeeper, Oregon

Andrea Matzke, Basin Coordinator 700 NW Multnomah Street Portland, OR 97232

Re: Draft Mercury TMDL Dear Ms. Matzke:

WR generally supports the approach of the Oregon DEQ in regard to the Mercury TMDL. WR feels that this is an important step to reduce the presence of methyl mercury in the Willamette River system. It is also refreshing that the discussion has been more about limiting the transport of mercury from a variety of sources, rather than being bogged down by the notion that various sectors did not “create” the mercury and do not view themselves as “sources.” Clearly the various sectors are transporting mercury into the Willamette River system and it is their responsibility to work to reduce this type of “source.”

The TMDL process is essential to protecting human health, and better enabling people in the Willamette River system to fish in a way that does not impact their health. While the impacts of implementation will not be immediate, the overall approach should enable mercury levels to drop significantly over time.

We have the following comments on the Draft Mercury TMDL

1) The general approach by the Oregon DEQ is sufficient. We believe the modeling and the overall analytical approach by DEQ and its contractor are sound based on multiple interactions during the development of the Draft TMDL.

2) WR agrees with the source assessment, and related methodology. With 94% of methylmercury coming from non point sources, there is much to do to limit runoff that carries mercury into our river system - from forestry, agriculture, and urban areas. Municipalities also have an important role.

3) The Land Use assessment for the Willamette Basin, while not perfect, is appropriate for determining the various sectors of land use and related runoff of methyl mercury into the Willamette River system.

4) We believe municipalities must play a key role in this effort, especially in the smaller sub-basins, and that any deferral of their full implementation must be carefully weighed.

5) The pathways for dispersal, described in the TMDL are sensibly described, and are logical in terms of how to approach curbing the presence of methylmercury in the Willamette.

6) We view the approach to the Implicit Margin of Safety as appropriate for this process. Having an adequate margin of safety will help guard against uncertainties in this process to help ensure that both human and ecological health are protected and that this TMDL reaches the overarching reduction goal.

7) We agree that MS4 permit holders have an important role to play in decreasing mercury from urban areas, and we encourage their active involvement and the setting of measurable objectives.

-
- 8) We believe that all of the WQMPs must have measurable goals.
 - 9) Given the vast tracts of land owned and managed by the U.S. Forest Service and the Bureau of Land Management, we believe their involvement in the TMDL is critical. They must have clear measurable goals in their WQMPs.
 - 10) Given the vast amount of land regulated by the Oregon Department of Agriculture, and the Oregon Department of Forestry, we believe that WQMPs from these entities must have clear, measurable objectives.
 - 11) We believe that the monitoring related to all WQMPs must be robust, timely, and accurate. This is imperative to the ultimate success of the implementation of the Mercury TMDL for the Willamette River Basin.
 - 12) We encourage the U.S. EPA and the Oregon DEQ in the development of a very comprehensive Monitoring Strategy for the implementation of this TMDL. We also encourage the DEQ to work hard to obtain the appropriate level of resourcing for this effort. This has long been a limitation for the agency, and at this point there is really no option other than making sure the appropriate level of funding is available for staffing and any equipment needs at the DEQ Lab.

We also have several concerns, and questions in regard to this Draft TMDL:

- 1) Given the breadth of need in regard to reducing runoff from both Agricultural and Forest lands, it seems that a more robust set of actions are needed than relying on the existing Agricultural Water quality Management Plans. While these are helpful, the current system has liabilities that may need not enable the TMDL to meet its target.

This is problematic in terms of implementation in our view. If anything this seems like a key opportunity to bolster the existing program at ODA in order to get more out of this effort. Can DEQ provide additional detail in regard to strengthening this element of the program as time moves forward?

- 2) What new monitoring will occur out of the TMDL implementation process on lands regulated by the Oregon Department of Agriculture?
 - 3) Does DEQ have robust enough monitoring to determine where there are water quality issues in agricultural areas? Given limitations at the DEQ lab, this seems like a fair question. How is DEQ augmenting its existing monitoring efforts to meet the need created by the Mercury TMDL?
 - 4) How will ODA create “measurable objectives” in ODA’s WQMPs? While Local Advisory Committees are identified, will these committees represent a broad stakeholder representation that includes those concerned about water quality, human health and the environment? If not, this needs to be part of the WQMP in order to establish meaningful measurable objectives from which improvement can be determined.
-

5) The language in the Draft TMDL related to the Oregon Forest Practices Act is lacking. A greater level of specificity by the Oregon DEQ would be helpful in directing the implementation and monitoring actions by the Oregon Department of Forestry. While it is nice to think that voluntary actions can be enough to implement this TMDL, given some of the feedback from this and other sectors, it may require the Oregon DEQ to set rules and regulations to augment existing ways of working between agencies.

6) Specifically, what guidance is DEQ providing to both the ODA, and the ODF in regard to setting measurable objectives and the metrics used for tracking measurable objectives?

7) How will the Oregon DEQ staff be working directly staff from ODA and ODF during the 18 months after issuance to develop specific metrics?

8) We believe that the DEQ should work vigorously with the Oregon Department of State Lands to curb erosion from lands held in Trust by the State of Oregon, such as the bed of the Willamette River. This has broad application for a variety of DSL regulated activities.

9) How will the Oregon DEQ work with the Oregon State Marine Board to limit sediment transport and dispersal from the new class of Wake Surfing Boats? As the DEQ knows, this class of craft creates large artificial waves that lift sediment, and spread it widely.

10) Wake surfing boats also erode riverside lands, both DSL owned and private. How with the DEQ direct the Oregon State Marine Board to limit wake size and the impact from Wake Surfing Boats on riverside erosion?

11) Given that the Oregon State Marine Board has very little environmental expertise, it may take additional effort by the Oregon DEQ to direct some of the activities they regulate. Can the Oregon DEQ help set measurable objectives for this agency in regard to large artificial waves that erode riverside land?

We very much appreciate all of the effort that the Oregon Department of Environmental Quality put toward developing this draft. We appreciate your consideration of our comments and your ongoing dialogue on this topic as we move forward.

Thanks so much for your consideration. Sincerely,

Travis Williams
Riverkeeper & Executive Director Willamette Riverkeeper

**81. Roger
Beyer,
Oregon
Seed
Council,
Oregon**

Andrea Matzke, Basin Coordinator
Oregon Department of Environmental Quality 700 NE Multnomah Street, Suite
600
Portland, Oregon 97232 WillametteMercuryTMDL@deq.state .or.us

27 August 2019

Re: Comments regarding the Revised Willamette Basin Mercury TMDL, Draft
for Public Comment

Dear Ms. Matzke:

Oregon Seed Council (OSC) would like to submit comments on the Willamette Mercury TMDL. OSC members include Oregon Ryegrass Growers Seed Commission, Oregon Tall Fescue Commission, Oregon Fine Fescue Commission, Oregon Orchardgrass Seed Producers, Oregon Clover Seed Commission, Oregon Seed Association, Oregon Seed Growers League, Tee-2-Green Corporation, Oregon Export Straw Association, Meadowfoam Growers and Willamette Valley Specialty Seed Association. The above groups consist of approximately 1300 farmers, seed dealers, straw balers and researchers.

As in initial matter, agriculture and forestry have always been proactive about protecting water quality on our lands, which are part of the largest land use in the Willamette Valley . Our state was one of the first to have a robust nonpoint source pollution program, and our members were proactive in helping to develop and implement the Agricultural Water Quality Management Program and Forest Practices Act. Since development of these programs, our sector has invested millions in studies, on-the-ground work, and compliance with our respective programs. We will continue to engage to proactively with our programs and to support public and private investment in water quality improvements on agricultural and forestry land.

The Willamette Mercury TMDL is clear that our sectors are not the cause of mercury in the Willamette Basin. Rather, atmospheric deposition of mercury is the dominant source of mercury from foreign sources is responsible for the mercury loading in the Willamette Basin. Any air emissions from within Oregon pale in comparison to the large amount of mercury Oregon receives from foreign sources. This fact has made writing a TMDL to reduce mercury loading in the Willamette Basin a nearly impossible task. Although our activities are not the source of mercury in the Willamette Basin, we will continue to be proactive about engaging to improve water quality in the Willamette Basin. That said, without addressing the real cause of mercury exceedances in the Willamette Basin, we are concerned that this TMDL requests load reductions that are larger than any sector can manage.

With that in mind, we raise the following concerns with the modeling and load reductions presented in the Willamette Mercury TMDL.

-
- Load Allocations are Uncertain because of Modeling - TMDL allocates daily loads and waste loads of mercury from nonpoint source areas and point source dischargers to the Willamette River system. These loads are based on the results of six separate computer models that were developed with hotly contested modeling practices. For example, the use of the Northern Pike Minnow and the chosen biomagnification factors for input parameters are not scientifically valid. This layering of uncertain modeling injects significant uncertainty into the load allocations.
 - Role of Atmospheric Deposition is Unclear - The TMDL allocations depend on the categorization of different sources (Table 10-1). In this categorization, atmospheric deposition is "double counted" as part of both the "General Nonpoint Source and Background" and as its own separate category. The former appears to be an aggregation of sediment erosion, surface runoff, groundwater, and atmospheric deposition directly to water. However, it is unclear what the second atmospheric deposition category represents, if it is not aerial deposition delivering mercury into the river system from sediment erosion, surface runoff, groundwater, or direct deposition. Moreover, the TMDL generally lacks clarity on atmospheric deposition of mercury and the impact foreign sources of Mercury is having on our waterways. Section 14.2 of the TMDL document states clearly that atmospheric deposition of mercury is the dominant source of mercury reaching Willamette Basin streams and that air emissions from Oregon are small relative to global sources.
 - TSS Surrogacy is Questionable - It is unclear from the TMDL if the relationship between the concentrations of TSS and THg is statistically relevant. It remains uncertain whether TSS can truly be measured in place of THg. Moreover, TSS has been ranked as the least preferable of four surrogates analyzed by Tetra Tech. ODEQ must explain why TSS has been chosen as a surrogate rather than other options that have been judged as preferable.

We also incorporate in full the technical comments from the comment letter submitted by the Oregon Farm Bureau, Oregon Forest & Industries Council, and Oregon Association of Nurseries.

Oregon's farmers and foresters are doing an exceptional job investing in water quality improvements, studying water quality on our lands, and meeting the requirements of our programs, and we will continue to do so after this TMDL is adopted. That said, our technical concerns should be addressed prior to adopting the TMDL. Due to the significant uncertainties in the model, we also hope additional work will be done through the Designated Management Agencies (DMAs) on implementation to assess what is truly possible and necessary within localized areas.

keep us updated as implementation moves forward and thank you for the opportunity to comment

Roger Beyer
Executive Director

**82. Richard
Herrington
Rose,
Oregon**

Andrea Matzke Basin Coordinator
700 NE Multnomah Street, Suite 600
Portland, OR 97232

Re: 2019 Willamette River TMDL comment Dear Ms. Matzke:

Permit me to comment on the proposed 2019 Willamette River TMLD. I retired from ODEQ after 25 years and relocated to Cottage Grove, Lane County, Oregon. My wife (a DOR tax revenue agent) and I have subsequently become members of both the local Elks Lodge and the Bohemia Mine Owners Association. Suction dredge mining is localized and is a negligible source of mercury transport as mining is done predominantly during low-flow periods, miles upstream from Dorena Reservoir. This Willamette River TMDL proposal unfairly burdens suction dredge miners as point-source polluters when they are not the source of the mercury. Abandoned mines on federal land are responsible. This TMDL singles out a small sector of citizens that rely on pan mining for recreation and family heritage

Upon review of the 2019 Willamette River TMDL, it became obvious the TMDL prematurely declares Dorena Reservoir and its tributaries to the 303d list. This fact is based on quotes contained within the TMDL, including:

- 1) "The mercury load leaving Dorena Reservoir was estimated by the modeling to be approximately 1.15 kg/yr (TetraTech, 2019). Currently, the available data on other abandoned mine lands in the basin is not sufficient to indicate whether these lower priority sites are sources of mercury or at what significance. DEQ and EPA will continue to assess and remediate, as warranted, the remaining abandoned mine lands within the basin. Also within the aggregated wastewater sector, DEQ is proposing to prohibit discharges from suction dredges under the General NPDES 700PM permit in streams with known mercury contamination from historical mercury and gold mining activities."
- 2) Without empirical data or other validation the 2019 TMDL concludes tributary suction dredge mining creates degradation and proposes to implement the Antidegradation Policy. "Further degradation will be prevented by following Oregon's Antidegradation Policy (OAR 340-041-0004) that provides the requirements for making decisions when considering any increases in mercury load to streams and rivers in the Willamette Basin that DEQ has authority to regulate."
- 3) "Stream tributaries to the Dorena Reservoir, which is 303(d) listed for mercury and has fish advisories for mercury contamination in place. Therefore, upon renewal of the 700PM permit, DEQ will prohibit suction dredge mining in locations in streams that flow from the former Bohemia Mining District and are tributary to the Dorena Reservoir (including Row River, Brice Creek, Sharps Creek, and Champion Creek). This 2019 TMDL targets and proposes to eliminate historic suction dredge mining all together. Note the original source of the mercury was legacy mines located above Dorena Reservoir tributaries. These abandoned mines remain a problem

and are not being cleaned up but are only stabilized under Risk-based Corrective Action measures.

4) "Methylmercury monitoring data are available primarily from the water column. The simplified conceptual framework used in this TMDL is that the long-term average methylmercury concentration in the water column depends on total mercury concentrations in the sediment, which in turn, depend on rates of total mercury loading from upstream. The complex transformations between different forms of mercury are not explicitly simulated; rather, they are approximated by an empirical relationship between observed methylmercury and total mercury in the water column." This basis of eliminating suction dredge mining is not justified as not valid to stream bed disturbance. It's important to note that these small, limited in scope suction dredge mining is conducted during stream low-flow conditions in creeks located miles from Dorena Reservoir. There's no proof that these small personal operations adversely impact mercury mobility or fish tissue concentration.

Suction dredge miners do not introduce mercury above natural background levels in waters of the state in amounts, concentrations, or combinations that may be harmful, may chemically change to harmful forms in the environment, or may accumulate in sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare or aquatic life, wildlife or other designated beneficial uses. To the contrary, miners are willing and able to mitigate mercury encountered during their operations and wish to become part of the solution, not the target as a polluter.

5) The Willamette River TMDL states that "disturbance of mercury laden sediment in these streams is currently intermittent and releases and methylation potential are not quantifiable, these prohibitions in this known historical source area will add to reductions achieved throughout the basin toward the 10 percent aggregated WLA for the wastewater sector." The 2019 TMDL proposes reservoir federal stakeholder (BLM/COE/BOC) to complete Reservoir Management Measures and assess rates of mercury intrusion and then to evaluate approaches to implementing the selected strategy. It would be only logical to make this Reservoir Management Measures determination prior to listing Dorena and its tributaries as 303b impaired and banning all suction dredge mining based on models, unrelated studies and simplified assumptions.

Further, suction dredge miners are willing and able to conduct mercury recovery from stream sediments during their operations. All recovered mercury will be properly contained and disposed under hazardous waste regulations. Miner claims are located between sole-source Bohemia mines and the Dorena Reservoir. Suction dredge mercury cleanup operations can facilitate a buffer between reservoir fish and known contaminations from Bohemia Mountain mines. This 2019 Willamette River TMDL singles out and punishes suction dredge miners without justification. Cottage Grove miners love and cherish their heritage and environment. Provide suction dredge miners an opportunity to demonstrate new/improved efforts to capture and remove mercury from operations. Miners are willing and able to utilize close-loop systems for mercury recovery purposes. Please consider allowing NPDES 700PM permit until which time stakeholders have completed the Reservoir Management Measures and miners have

demonstrated their ability to capture and mitigate any mobile mercury that may be disturbed during small and limited operations.

Thank you for the opportunity to comment. Should you or others have any questions or concerns, please contact me at 541-285-3995 or via email at herringtonrose@hotmail.com.

Respectfully,
Richard Herrington lose

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Office of the Governor
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Department of Administrative Services
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Salem, OR 97309-0405

29 August 2019

**83. Stan
Boshart,
SJB Farms,
Oregon**

Andrea Matzke, Basin Coordinator
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Portland, Oregon 97232 WillametteMercuryTM DL@deq.state.or.us

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SEP 04 2019

NORTHWEST REGION

Re: Comments regarding the Revised Willamette Basin Mercury TMDL, Draft
for Public Comment

Dear Ms. Matzke:

We, Stan and Lori Boshart of SJB Farms, write to submit comments on the
Willamette Mercury TMDL. We represent SJB Farms, a grass seed and hazelnut
farm located in the Willamette Valley.

As in initial matter, agriculture and forestry have always been proactive about
protecting water quality on our lands, which are part of the largest land use in the
Willamette Valley. Our state was one of the first to have a robust nonpoint source
pollution program, and our members were proactive in helping to develop and
implement the Agricultural Water Quality Management Program and Forest
Practices Act. Since development of these programs, our sector has invested
millions in studies, on-the-ground work, and compliance with our respective
programs. We will continue to engage to proactively with our programs and to
support public and private investment in water quality improvements on
agricultural and forestry land.

The Willamette Mercury TMDL is clear that our sectors are not the cause of
mercury in the Willamette Basin. Rather, atmospheric deposition of mercury is
the dominant source of mercury from foreign sources is responsible for the
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pale in comparison to the large amount of mercury Oregon receives from foreign
sources. This fact has made writing a TMDL to reduce mercury loading in the
Willamette Basin a nearly impossible task. Although our activities are not the
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engaging to improve water quality in the Willamette Basin. That said, without
addressing the real cause of mercury exceedances in the Willamette Basin, we are
concerned that this TMDL requests load reductions that are larger than any sector
can manage. With that in mind, we raise the following concerns with the
modeling and load reductions presented in the Willamette Mercury TMDL.

- Load Allocations are Uncertain because of Modeling - TMDL allocates
daily loads and wasteloads of mercury from nonpoint source areas and point
source dischargers to the Willamette River system. These loads are based on the
results of six separate computer models that were developed with hotly contested

modeling practices. For example, the use of the Northern Pike Minnow and the chosen biomagnification factors for input parameters are not scientifically valid. This layering of uncertain modeling injects significant uncertainty into the load allocations.

- Role of Atmospheric Deposition is Unclear - The TMDL allocations depend on the categorization of different sources (Table 10-1). In this categorization, atmospheric deposition is "double counted" as part of both the "General Nonpoint Source and Background" and as its own separate category. The former appears to be an aggregation of sediment erosion, surface runoff, groundwater, and atmospheric deposition directly to water. However, it is unclear what the second atmospheric deposition category represents, if it is not aerial deposition delivering mercury into the river system from sediment erosion, surface runoff, groundwater, or direct deposition. Moreover, the TMDL generally lacks clarity on atmospheric deposition of mercury and the impact foreign sources of Mercury is having on our waterways. Section 14.2 of the TMDL document states clearly that atmospheric deposition of mercury is the dominant source of mercury reaching Willamette Basin streams and that air emissions from Oregon are small relative to global sources.

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Oregon's farmers and foresters are doing an exceptional job investing in water quality improvements, studying water quality on our lands, and meeting the requirements of our programs, and we will continue to do so after this TMDL is adopted. That said, our technical concerns should be addressed prior to adopting the TMDL. Due to the significant uncertainties in the model, we also hope additional work will be done through the Designated Management Agencies (DMAs) on implementation to assess what is truly possible and necessary within localized areas.

Please keep us updated as implementation moves forward and thank you for the opportunity to comment.

Sincerely,
Stan Boshart
Owner, SJB Farms

Lori Boshart
Owner, SJB Farms

September 3, 2019

**84. Tom
Hubbard,
City of
Corvallis
Public
Works,
Oregon**

Email: Willamette Mercury TMDL@deq.state .or.us Andrea Matzke
Basin Coordinator
DEQ Water Quality Division
Oregon Department of Environmental Quality 700 NE Multnomah Street, Suite
600

Subject: Comments regarding the Willamette River Mercury Total
Maximum Daily Load (TMDL) Development

Dear Andrea,

This letter provides comments on the public review drafts of the Willamette River
Mercury TMDL dated July 3, 2019 and the Technical Support document dated
June 1, 2019 .

Thank you for reviewing and taking into consideration our comments.

Tom Hubbard, Utilities Manager

Public Review Draft Willamette Basin Mercury TMDL:

Section 8, Seasonal Variation: The Mass Balance model was used to "explicitly
incorporate the seasonal variation related to climate, land management, reservoir
operations, and vegetation" and therefore DEQ determined that between this
model and the other linked models, that seasonal variation had been adequately
represented. CSO communities such as Corvallis and Portland experience greater
effects from seasonal variation and the affect upon them does not appear to have
been incorporated into the models. We request that CSO facilities be considered
since mercury concentrations may vary considerably between wet and dry
seasons.

Section 10. Allocations: This table summarizes allocations for the various sectors.
This table will likely be a key reference in interpreting and implementing TMDL
requirements. As such, the table should be clear and accurate in conveying the
TMDL requirements. We recommend the following revisions to ensure clarity
regarding the TMDL requirements:

- With respect to incorporating Reserve Capacity, the write up and methods
are confusing and subjective. With respect to footnote #3 in Table 10-1, it is not
clear how an additional 1% reduction from atmospheric deposition would be
available for reserve capacity nor how it will be achieved. Could you please
provide further detail as to how the 1% number was derived? In addition, there is
an error in the math of the fourth equation on page 63. $42.17 \text{ g/day} - 0.42 \text{ g/day} =$
 41.75 g/day not 41.58 g/day .
 - Table 10-1 notes that "NPDES wastewater point source discharges" are
subject to a 10% reduction. Section 10.2 lists major and minor domestic sewage
treatment plant wastewater permits, major and minor industrial wastewater
-

permits and wastewater discharges covered under general permits with wasteload allocations subject to the 10% reduction. Further on in the section it is noted that DEQ expects a 10% cumulative reduction from all point sources but then it states that the 10% reduction applies to major municipal NPDES wastewater discharges and industrial permittees only and that minor municipal facilities and general wastewater permitted categories are considered de minimis and not subject to the 10% reduction. Since the efforts at reduction are a 10% cumulative reduction the onus is put upon the majors and industries to procure that 10% for all point sources. We recommend that the TMDL be amended, to reflect that the sector in which the 10% cumulative reduction applies to is majors and industrial permittees only, including a note in Table 10-1 that states that minor municipal facilities or general wastewater permittees are not subject to the percent reduction nor is their mercury contribution to be held accountable within the 10% reduction.

- In order to achieve the 10% reduction, major domestic sewage treatment plants will have to implement Mercury Minimization Plans (MMPs) and monitor their mercury discharge to calculate a percent reduction. Many majors have made considerable efforts already to minimize their mercury loadings and therefore an additional 10% may not be achievable. For instance, through public outreach, education and collection events, the City of Corvallis has achieved a 98% reduction in mercury loadings over the last 10 years. When the City's NPDES permit is renewed we will have a MMP showing that we plan to continue these activities and implement additional measures to reduce the mercury loading further. Because of our existing and past efforts it seems unlikely that we will achieve an additional 10% reduction. We suggest that the DEQ address this concern and add exemptions to the POTW's that can show that they've been implementing an effective MMP already for the 10% reduction.

- On page 61 of the TMDL document in the first paragraph of Section 10, the last sentence states that "the wasteload allocations are used to establish effluent limits in discharge permits." This sentence should be changed to say "the wasteload allocations are incorporated into discharge permits," as not all point source permits, such as MS4 NPDES permits, include effluent limits.

Section 11. Margin of Safety: As a result of all the various conservative modeling assumptions, we request to quantitatively estimate the margin of safety that is incorporated into this TMDL. A table should be provided along with narrative that shows where each conservative modeling assumption was made that contributes to the total margin of safety. We believe that transparency is critical for DEQ, stakeholders and the public to understand the significant conservative assumptions being used in the TMDL development process. At a minimum, the estimated margin of safety for the following three areas should be clearly shown in the document:

- If the next highest trophic level fish were used as the target fish species (Largemouth Bass) at 0.215 mg/kg MeHg, the target instream total mercury concentration would be approximately 58% higher than the target concentration based on use of the Northern Pike Minnow's concentration of 0.136 mg/kg MeHg (Table 4-4, page 56)..

- If the mean value (0.229 mg/kg MeHg) was used as opposed to the median value (0.136 mg/kg MeHg), the target instream concentration would be approximately 68% higher. (Table 4-4, page 56 for the NPM).

- The TMDL analysis used total mercury concentration in fish tissue rather than the methylmercury in the criterion. As stated in the TMDL document on pages 70-71, "The total mercury in fish is composed of 95 percent or greater methylmercury in higher trophic level piscivores (USEPA, 2000), therefore using total mercury concentration in fish tissue rather than methylmercury increases the margin of safety because the methylmercury concentration will be slightly less than the total mercury concentration. "

Section 12. Reserve capacity: Section 12 of the TMDL notes that the 1% reserve capacity is an allocation for increases in pollutant loads from future growth and new or expanded sources. This section states that the reserve capacity may be granted to NPDES permitted point sources and/or nonpoint source designated management agencies and responsible parties. It is not clear how the reserve capacity would be made available for new or expanded sources in a TMDL that includes sector-specific percent reduction allocations. Please describe how the reserve capacity would be available for this purpose.

Section 13.3.1.11 Local Government: Cities and Counties: We think it is important in this section to be clear and consistent when using the terms urban and rural to describe streams and runoff. This section incorrectly refers to "urban streams" when it is focused on a discussion of rural areas. In the WQMP in general, rural runoff is consistently and incorrectly referred to as urban runoff.

Section 13.3.2.1.3 Additional NPDES Wastewater Permit Implementation Tools: Please remove this section from the TMDL document. Given that the TMDL does not recommend inclusion of effluent limits in point source permits, this section regarding variances and intake credits is irrelevant and could lead to confusion.

Section 13.3.2.2.1 MS4 Phase II Permittees: There is a requirement in this section to "develop a control measure effectiveness monitoring strategy to inform implementation of future control measures." We are interpreting this requirement to apply to only those entities that choose to implement a mercury minimization plan to meet TMDL requirements and not to Phase II jurisdictions covered under an individual permit that include the conditions in the MS4 Phase II general permit effective at the time regarding construction and post-construction requirements. If that is the correct interpretation, this requirement for a monitoring strategy should be expressed as a bulleted item along with the other required plan elements. If this is not the correct interpretation, it does not make sense to require individual Phase II MS4 NPDES Permittees to conduct monitoring as there is not a rationale that would make these jurisdictions in greater need of monitoring than a general Phase II permittee. And, this requirement could end up applying to very small communities with limited resources. Monitoring requires significant staffing, resources and sophistication even for the larger jurisdictions.

Timelines: As stated on page 73, Implementation Plans would be required for submittal 18 months after issuance of the TMDL. In addition, on page 121, it states that as part of the five-year review, DEQ will evaluate the adequacy of the strategies contained in implementation plans to reduce pollutant inputs and restore water quality. As part of the Willamette River Basin TMDL five-year review,

implementation plans were recently updated and submitted to DEQ in late 2018 and early 2019. Please consider lining up the timeframes for the next five-year reviews for both the recently submitted plans, and the plan that will be required 18 months following TMDL issuance.

Section 13.6 Monitoring and Evaluation: In this section it states that "DEQ and EPA are currently developing an Assessment and Monitoring Strategy to Support Implementation of Mercury Total Maximum Daily Loads for the Willamette Basin. This monitoring strategy will be used to evaluate effectiveness of DMA and responsible person implementation strategies at meeting allocations and may require certain DMAs to collect data." Given our previous experience with monitoring, and the potential for significant resource implications, we request an opportunity to be involved in, and provide input towards the development of this strategy.

Public Review Draft Technical Support Document:

Target Fish Species: We have concerns with use of the Northern Pike minnow as the target fish species. The water quality standard for mercury is based on protection of human health and assumes a 175 g/day consumption rate, which equates to 30 6-oz servings per month. Unlike salmon or bass, "people don't fish them (Northern Pike minnow) for food or sport, not the tribes nor commercial enterprises" (Russell Porter, Pike minnow program manager for the Pacific States Marine Fisheries Commission). The only viable reason to fish for the Northern Pike minnow is for the bounty upon their heads. Since 1991 Oregon has had an established bounty on the Northern Pike minnow (funded by the Bonneville Power Administration) due to their diet, 70% of which is composed of juvenile salmon. We find that using a target fish species that is not consumed by any group of peoples within the state to establish a TMDL that is based upon consumption to be erroneous and suggest that the limit be established based upon the median of the consumable fish found within the waterbody since that would be more relevant to the basis of the TMDL.

This paints an inaccurate picture of fisheries consumed in the Willamette River Basin. Given this target species selection, we also have concerns about communications to the public at large. The first question people ask with regards to mercury is whether it is safe to consume fish. With the use of the Northern Pike minnow as the target fish, the primary message is that fish in the Willamette River are highly contaminated and should not be consumed. We do not feel that this is an accurate or appropriate message and could potentially damage a popular and lucrative tourist activity within our state.

Biomagnification Factors: Just a note that the values used in Table 3-5 for WRB Cumulative BMF are incorrectly listed as medians but are actually 95th percentile values as pulled from Table 3-3. This impacts Figure 3-7 as well. This relates to Table 6.2 and Figure 6.2 in the TMDL document as well. Were the median values or the 95th percentile values used in moving forward with the translation model? This has important implications in understanding the margin of safety.

WWTP source data: Table 5-9 (page 89) presents the average annual flows and average mercury concentrations for large Publicly Owned Treatment Works

(POTWs), which are used to estimate total mercury loads in the Willamette River Basin. The average annual flows in the table appear to be a mix of actual flows and design flows. There can be a considerable difference between actual flows and design flows. For example, a design flow, which equates to 57.4 MGD, was used to estimate mercury loads for Clean Water Services' Rock Creek treatment facility whereas actual flows are 32.4 MGD (for 2018). It appears that actual flows were used for some other POTWs. Since the purpose of this evaluation is to estimate current loads, it would be more appropriate to use actual annual average flows rather than design flows. The table should be revised to ensure that actual annual average flows are being used.

Section 5.3.5 explains the variety of sources referenced for the data in Table 5-9 but does not specify the date range of the data for actual data collected. In the last decade, many communities have made efforts to minimize both water usage and mercury, therefore the older the data the higher both values are likely to be for any given municipality. Table 5-9 should be amended to include the date range of the data collected if the data is from actual values and that data should be within the last five years if at all possible. Current data (within the last five years) should be weighted higher than older data (greater than five years) due to its relevancy.

A cursory review of the data suggests that the annual average flow and mercury concentrations for some POTWs is inaccurate. Table 5-9 lists the average flow for the City of Corvallis as 4,131 MG/yr with an average mercury concentration of 6.8 ng/l. The actual flow for the last five years (January 2014 through December 2018) was 3,895 MG/yr and the mercury concentration was 4.4 ng/l. This equates to a load of 0.065 kg-Hg/yr, 39% lower than the value of 0.106 listed in table 5-9 (all data used to derive this loading can be found in DMR monthly reports and annual pretreatment reports from 2014 through 2018). Also the City of Salem's flow data is inaccurate. The flow for the Salem facility is specified as 690 MG per year in Table 5-9, which equates to daily average flow of 1.9 MGD. The City of Salem operates a treatment facility with an annual average flow of 15,085 MG per year. Flows from this facility are considerably higher than presented in Table 5-9.

Furthermore, Table 5-9 specifies very high mercury concentrations for the Wilsonville, Portland (Tryon Creek), and Salem facilities. There is nothing unique about these facilities that would justify the substantially higher concentrations noted in the report. This is likely due to the use of higher quantitation levels resulting in a mix of censored and uncensored data. DEQ should revise the data for both the City of Corvallis and Salem facilities, update the table with current data where possible and verify the accuracy of the data used for Wilsonville, Portland, and all POTWs presented in Table 5-9.

Estimated Mercury Concentrations Reflective of POTW Discharges: In table 5-9 (page 89), we have concerns related to the estimated high mercury concentrations used in the model for some of the POTWs. For several facilities, where concentrations were not available, the Technical Support Document notes that data from similar facilities was used and concluded that 11.7 ng/L was the appropriate mercury concentration. This concentration is much higher than the median mercury concentration from POTWs which is 2.6 ng/L. This median mercury concentration of 2.6 ng/L was used by DEQ to characterize mercury levels for minor municipal facilities when data were not available. We think this

is the appropriate concentration to use for all facilities where data were not available.

Combined Sewer Areas: It is not clear how the Technical Support document addresses the combined sewer service area in Corvallis or Portland. On page 106, the report states that "THg loads associated with CSOs are considered to be already represented by estimates of THg load associated with urban stormwater." What urban stormwater load is being referenced here? Urban stormwater from outside of the CSO area, or urban stormwater from the CSO area? This is not clear.

Stormwater Modeling: We are requesting additional information in the Technical Support Document to help us better understand the approaches and data that were used for stormwater loads modeling. We would like to understand the MS4 areas that were used in the model. It would be helpful to have a table to show the MS4 jurisdictions included in the model and the impervious area and the estimated effective impervious area estimations used for each jurisdiction. This information would be helpful in ensuring that areas such as those draining to UICs are not included.

Additionally, understanding the model inputs are necessary for conducting the wasteload allocation attainment analysis, which are precursors to developing benchmarks as specified in Phase I MS4 NPDES permits. Knowing the model inputs will allow for an "apples to apples" comparison in future wasteload allocation assessments.

Section 15: Recommend including a "Definition" appendix similar to recent MS4 phase II permit. This could greatly avoid confusion in several sections. Include such terms as "Relative Allocation of Load Capacity."

We appreciate DEQ's consideration of these comments towards producing a clear and implementable Willamette River Mercury TMDL.

**85. Jerome
Rosa,
Oregon**

Dear Basin Coordinator Matzke,

I am a farmer in the Willamette Valley, and I am writing to express my concerns about the Willamette Mercury TMDL. As I understand it, the TMDL is holding farmers responsible for mercury related to air emissions outside of Oregon, and largely from outside of the United States. Even though farms are not a source of mercury emissions, DEQ is seeking to regulate us simply because mercury gets onto our farms and onto waters that flow through our lands.

I am concerned because the modeling that supports the development of the TMDL has significant uncertainty associated with it. Many of the correlations DEQ draws are not supported by science or do not have sufficient data backing them up, and the model makes too many assumptions to correlate methylmercury in fish to the atmospheric deposition of mercury onto farm and forest lands. In many cases, DEQ's own experts admitted that the data was too limited or that many assumptions had to be made to get the data to fit the modeled outcome. Given how significant the regulations stemming from the TMDL could be for farming in the Willamette Valley, I am not comfortable with basing agriculture's load allocation on assumptions and limited data sets that have issues that compound across several different models.

We have always been proactive about protecting water quality on our farm. Oregon was one of the first states to enact a nonpoint source pollution program, and farmers have been proactively collaborating with the state and others on water quality improvements ever since. We will continue to engage to improve our water quality. However, I cannot support a TMDL that seeks to regulate a pollutant that farmers have no control over, and which originates from outside of our state, especially when that TMDL is based upon compounded modeling issues and insufficient data.

Sincerely,

Jerome Rosa
